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DOMESTIC ENGINEERING

The Plumbing and Heating Weekly

NORBRASCO
Means
None Better
BATH COCKS BASIN COCKS

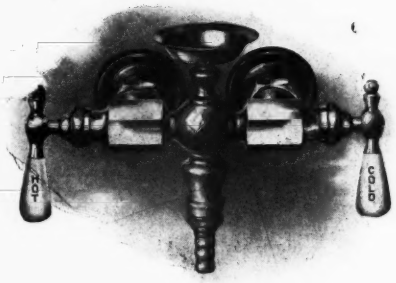


Fig. F 3

Fuller Bath and Basin Cocks

are becoming more popular every year

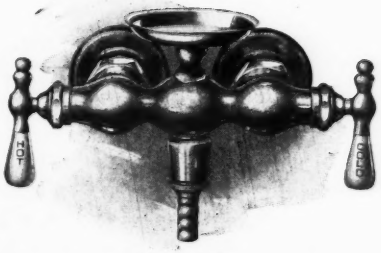


Fig. F 5

Fig. F 7

Fig. F. 6

The durability and long life of NORBRASCO Fuller Work is due in a large measure, to the high quality of rubber used. Only the best grade rubber, as well as other materials, enters into their manufacture.

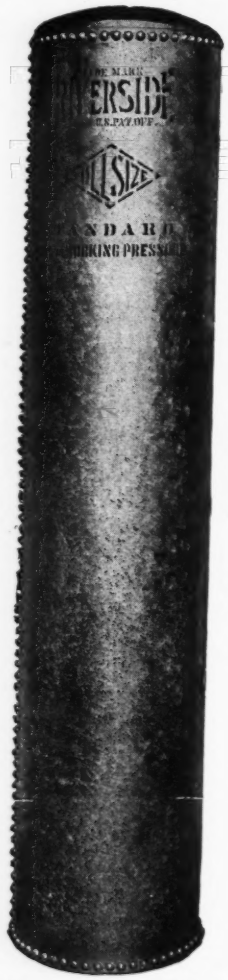
Always give satisfaction. Save return trips for making repairs.

Your Jobber Can Supply You

NORTHERN BRASS MFG. CO.

Largest Manufacturers of Bath Cocks and Supply Pipes in the World

WAUKEGAN, ILLINOIS



Actual Photograph—not retouched by the artist

Did You Ever See a WELDED Steam Boiler?

Of course you have not! The chances for your seeing a Welded Steam Boiler are about as good as your seeing a Purple Cow. If by chance you think you have ever seen either of these peculiarities, you would readily be considered fit for mental examination.

For Strength and Safety, Steam Boilers must be Riveted. In Massachusetts, Steam Boilers must be Riveted according to Regulations laid down by the Commonwealth; and Air Tanks, when used for pressures over 50 lbs. and in connection with pneumatic machinery, must also be Riveted, according to Rules and Regulations laid down by the State. For the same reasons RIVERSIDE RANGE BOILERS ARE RIVETED AND BRAZED.

Remember that the pressures put on Range Boilers average even higher than Steam Boiler pressures and, with the use of gas water heaters, lurking dangers are ever present. Therefore, it behooves you to take no chances. For Strength and Safety, the "Riverside" Riveted and Brazed Range Boiler is without equal, especially the "Riverside Kopsteel" Range Boiler, which is guaranteed for 6 years at 150 lbs. working pressure and is subject to a test pressure of more than 300 lbs.

When you install a Range Boiler, show as much care and thought as you would if you were putting in a Steam Boiler. Take no chances with construction that is not approved for steam boiler practice. Like "x" in algebra, welding is an unknown quantity—it may be good or bad. It not only depends upon the personal element, but also upon the process. Riveted Boilers have a known strength which can be estimated carefully, and exhaustive tests on boilers have checked up with the calculations. In making Riveted Range Boilers, the human equation is reduced to a minimum.

When you think of Range Boilers, think of Steam Boilers. Think of Strength and Safety, and then think of the Riveted and Brazed "Riverside" for your particular job.

Send for sample of the famous "Riverside" Riveted and Brazed Seam, cut from a regular Stock Boiler.

RIVERSIDE BOILER WORKS, Inc.

The Quality Range Boiler Builders

CAMBRIDGE, MASS.

EDITORIAL
DOMESTIC ENGINEERING

Whole No. 1428 CHICAGO, APRIL 24, 1920 Vol. 91, No. 4

OPPORTUNITIES FOR YOUNG MEN IN HEATING AND VENTILATING WORK

THE young man growing up in the heating and ventilating profession, who plans to make it his life work, has many splendid opportunities to further his knowledge. If he is located in or near many of the larger cities as far west as Kansas City or Minneapolis, he has a monthly chance of attending the chapter meetings of the American Society of Heating and Ventilating Engineers. Here he can learn a great deal from those who have been identified with various progressive movements in the profession and gather much valuable information on modern theory and practice. In some centers there are technical schools having courses on heating and ventilating which can be attended at night, and this study can be supplemented by careful reading of trade papers devoted to such subjects. Then there is the correspondence course, which should not be overlooked in the desire for knowledge, and this applies particularly to the young man who is isolated and has neither the time nor money to attend schools or chapter meetings. Not only does this apply to the young man but also those already established in the business in some capacity who feel the need of scientific training.

Great Strides in Industry.

There is undoubtedly no branch of industry which has made greater strides or one which has become more important to comfort and health than heating and ventilating, particularly within the past ten years, as there are continuous demands each year, which require the services of scientifically trained men in this field. The modern commercial and office buildings, theatres, public buildings and industrial plants the country over are dependent upon the successful operation of their heating and ventilating systems. This science is vitally important to the industrial plant, particularly where hundreds or thousands of employes are dependent upon such systems for both health and comfort. The development of new industrial processes for various classes of production require, in most cases, attention in some phase of the heating and ventilating science, which means that more men are needed to carry on the work.

Efficient Labor a Big Factor.

The manufacturer of today who deals extensively with labor production recognizes the importance of modern science. In fact, the period of high pressure production through which the whole industrial world has just passed has proven most conclusively the necessity for greater and more modern methods of production efficiency. Labor represents, perhaps, the most fluctuating factor in production, and to secure high efficiency from labor, working conditions must be satisfactory. The important elements are, fresh air, uniform healthful temperature, proper humidity, and good light. This is based on facts established from surveys made throughout the country, prior to and after America's entry into the war. These surveys brought to the attention of practically every line of industry the most essential step for increased production. Systems of heating and ventilating were most often found inadequate, resulting in low labor efficiency, and throughout the thousands of plants inspected, heating or ventilating had been neglected to a surprising degree.

It is an established fact that, after rectifying many inferior conditions, the production of such plants was noticeably increased. Instances of individual conditions were found in plants where proper ventilation improved labor efficiency from 15 to 50 per cent and modern heating systems as high as 30 per cent. Such conditions had existed throughout the country and exist today in many institutions, due, to some extent, to the shortage of qualified engineers.

Advancement Up to the Individual.

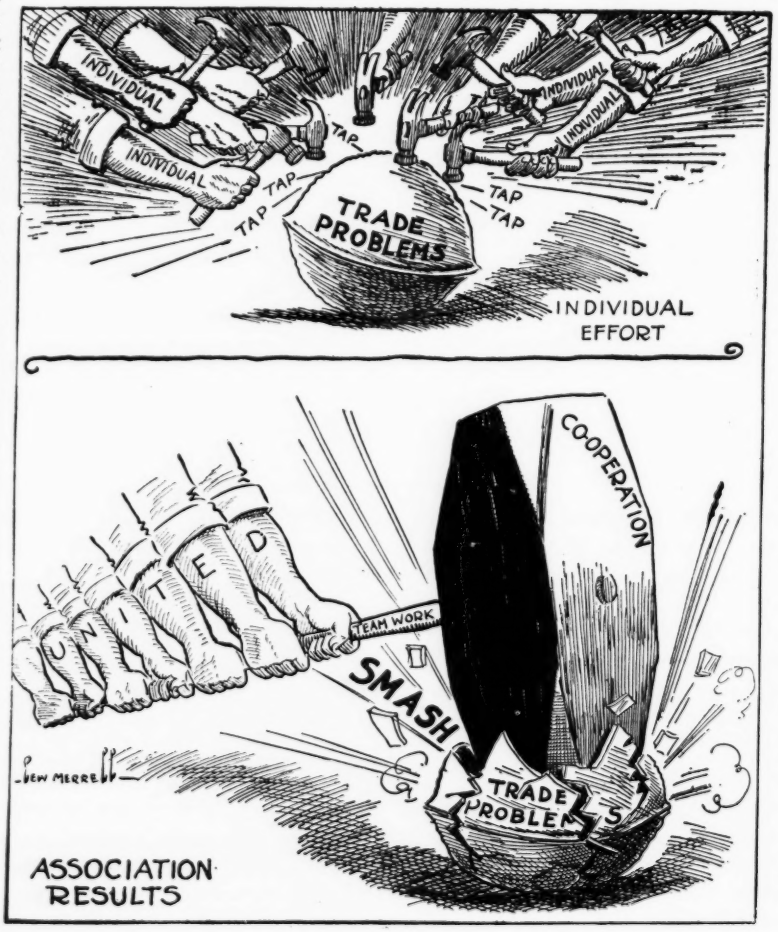
There is almost unlimited opportunity for the younger man in either or both heating and ventilating work, whether he becomes engaged in the production, installation or distribution of such systems or appliances. If he has the personal ability to meet the requirements of industrial necessity and can produce results, his services are in demand. This applies to the engineer, contractor or distributor without regard to location, the opportunity being, in proportion, as great in the smaller cities of 10,000 to 15,000 population as to the larger cities or industrial centers. Therefore, under the present conditions, and with the advantages now offered for scientific study, one's personal advancement becomes a matter of individual choice and ambition.

CRACK *the* TRADE PROBLEMS NUT *with the* SLEDGE HAMMER *of* CO-OPERATION

Individual Effort Only Nicks the Shell, But Team Work Gets Results

By George Brice

IT'S an old saying about throwing away your hammer and getting a horn, but if you've got the right kind of a hammer the horn will take care of itself. This is best illustrated by the cartoon herewith. The top picture sketches a condition existing in many cities throughout the country. Here the men in the plumbing and heating business will be found pecking away at the nut and getting nowhere. A few miles away will be found the city that knows the value of organization. The contractors in that town are prosperous, and the reason is that they have their regular association meetings, and all of the fellows are on the job to exchange ideas. They appreciate that one man can't know it all, and the best way to learn is to meet one another on a common ground. That is well illustrated in the bottom picture. United we stand, divided we fall, is another old saying that needs no introduction or explanation, and we will live better from day to day because of co-operation of producers and distributors, and we all live better year after year with better co-operation.



Experience is Costly.

What is the position of the individual plumbing and heating contractor who does not belong to his local or state association? Unless he possesses unusual ability, he will advance only so far, and Old Man Experience, whose teaching is mighty expensive in more ways than one, will have to be his business doctor. The contractor may drift along year after year, making some progress, no doubt, but not what he might make if he joined hands with his fellow craftsmen locally and throughout the state. He must acquire, to be successful, that give-and-take spirit, which can be readily absorbed by contact with others in his field. That means eliminating selfishness and establishing confidence.

A Successful Association.

What a rare pleasure it is to meet plumbing and heating contractors in a town where friendliness and co-operation dominate their relations. I recall a recent visit to a town of 20,000 population, having half a dozen plumbers, all members of the association. The first one I called on is prominent in state association work, and he greeted me cordially. After spending an hour with him, he urged me to visit all other shops in town and said: "You'll find the members of our association pretty good fellows." I shook his hand cordially and told him I had found that out already.

The second one I called on was equally cordial and spoke of other plumbers in town in a way that compelled my admiration. After we had gone through his shop from front to back and downstairs, my host said: "Jump into the car. I want to take you round to see a nice shop. It's run by a fellow who used to work for us, and he's making good." We arrived at our destination in a few minutes and found another local plumber visiting there. We talked of many things, but what interested me partic-

ularly were the things they told about, which have been accomplished **by co-operation.**

100 Per Cent Meetings.

Are these men successful? I'll say they are! Their meetings are 100 per cent strong in attendance. Their shops are among the nicest I've ever seen—and I found them the best fellows in the world. They know what overhead expense is—the value of window and showroom displays—and the necessity of getting a fair profit on every job.

A Nearby Contrast.

Not far from that town is one somewhat larger, where conditions are anything but desirable. I found the spirit met with in the smaller town lacking as a whole, but existing in a few shops. There was the desire to co-operate on the part of some, and they said they had found it mighty hard work to conduct business on the proper plane. What a contrast to the smaller town! Their shops were not so well arranged—work was being taken at ridiculous figures, and association meetings did not approach 100 per cent attendance. And so, because of a few recalcitrants, this association cannot accomplish the best results. The stubborn ones are not only holding themselves back, but also their business associates. This is a point they do not consider.

Men Believe in Organization.

It is a rare event to find a man who does not believe in association work. With this acknowledgement of confidence in organization, it seems strange, therefore, that more men do not back up this belief with practical co-operation. Many consider that they have done their part, when they do become members, by paying their dues and leaving George do the work while they get the benefits. That is not as it should be, because there is a duty involved that the individual owes the craft, even though he may not recognize it as a duty. His position in life has been made possible through the help of others—which means co-operation.

The Big Men Are Workers.

All men have a place in the association. If any men were justified in not taking an active part in organization work it would be the big men, who, because of their initiative and energy, would make a real success under most any conditions. But what do we find? Usually, the bigger the man, the more widespread are his activities. He is willing to impart much of his knowledge, experience and counsel to those of his associates who are desirous of learning what constitutes success. The man who makes these personal sacrifices is not wholly interested in aggrandizement, but, rather, fulfills an obligation.

Enter the Spirit of Association.

If you, Mr. Reader, are not a member of your local, state and national associations, join without delay. Make up your mind that it is an opportunity to progress that you cannot afford to treat lightly. Remember, in joining these organizations, that other members are fellows just like yourself—not philanthropists, but business men who are trying to get ahead on the basis of co-operation. Recognize all of these things and enter into the spirit of organization wholeheartedly and enthusiastically.

ADVERTISING FOR SPRING BUSINESS.

This is the time of the year when people spend millions of dollars on interior decorations, but how much are they spending for plumbing and heating equipment? It is certain that sales will continue to maintain a certain level unless some effort is made to stimulate people into buying what they actually need to have a modern home. The advertisement of Orth's Plumbing Shop in the Mannington, W. Va., "Leader" touches on this timely topic. It urges the home owner to make a good job of it when spring cleaning by fixing up his bathroom in fine shape. It is emphasized that the modern bathroom will return more real satisfaction than any amount of wall paper or varnish. There is the substantial argument that a good bathroom outfit, properly installed, needs little or no upkeep. If the home owner wants to impress visitors, there is no easier way than that of showing them a magnificent bathroom. People are prosperous, and now is the time to talk to them about modern equipment.

Had You Thought About It?
While having the interior of your house redecorated why not have the bath room plumbed with the most modern conveniences.
Modern bathroom equipment will return more real satisfaction than any amount of wall paper or varnish. And besides, good plumbing and proper sanitation are requisites of good health.
There is plumbing and good plumbing. Ours is plumbing with brains.
Orth's Plumbing Shop

A GOLDEN OPPORTUNITY FOR INCREASED INCOMES.

Plumbing and Heating Contractors in Minnesota and Adjoining States Take Week's Training in Minneapolis Under Auspices of National Trade Extension Bureau.

An undertaking, widespread in its benefits and unique in the plumbing and heating field, took place this week in Minneapolis, at the Dunwoody Institute, when plumbing and heating contractors from Minnesota and adjoining states gathered for a five days' course in bookkeeping, cost accounting, and new and more practical methods in plumbing and heating estimating and installation. Under the leadership of William J. Woolley, secretary-manager of the National Trade Extension Bureau, and his staff, W. W. Hughes, president of the Minnesota Society of Sanitary and Heating Engineers, Secretary William Redieske, of the latter organization, the Dunwoody faculty and other well known experts, a remarkable program was launched on Monday, April 19th, and continued until Friday, April 23rd. The course was open to any master plumber or heating contractor, any office employe male or female, any foreman, either plumber or steam fitter, or any journeyman about to go into business for himself. Early advices indicated an attendance of about 100 people, all anxious to become better business men, to learn how to conduct better shops, and to increase profits.

This article is being written as the course is in progress, so that it is impossible to tell concretely of the benefits obtained from this convention, individually and collectively. It needs no stretch of the imagination, however, to visualize the results that were undoubtedly attained by all in attendance.

A complete report of the gathering will be published in the next issue of "Domestic Engineering."

Shop Shorts, No. 49.—Washing the front window once a week helps to clean up additional business.

Shop Shorts, No. 50.—Don't wait till Fall before starting a campaign for heating business. Get busy now.

HEATING *and* VENTILATING *a* COMBINED CHURCH, PARISH HOUSE *and* RECTORY

An Interesting Heating and Ventilating System Described and Illustrated in Detail

By Chas. L. Hubbard

(Continued from Page 100 in the April 17th Issue.)

Parish House.

This contains a gymnasium, room for a future swimming pool, toilet and locker rooms, kitchen and pantry, in the basement; Sunday school room, class rooms, and library, on the first floor; and class rooms and brotherhood's room, on the gallery floor. These rooms are heated by direct radiation throughout, with special equipment for the ventilation of the Sunday school room when in general use.

All radiation in the basement is in the form of overhead circulation coils, in order to bring it above the water line

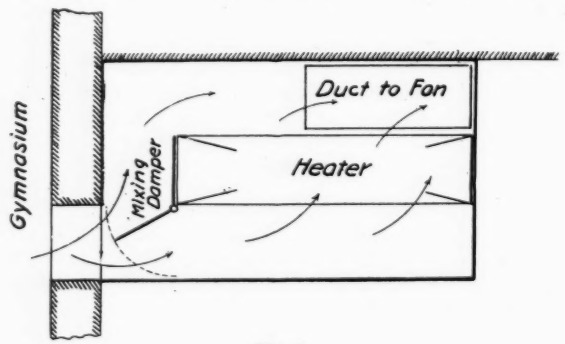


Fig. 8.

of the boilers. Radiation above the basement is of the usual cast-iron sectional form, being two columns and three columns, according to size, in order to give symmetrical proportions. Radiators are, in general, placed beneath windows, as the wall spaces are more or less generally wanted for furniture, cases, etc.

The ventilating equipment for the Sunday school room consists of a heater made up of pin radiator sections, encased in galvanized iron and hung at the kitchen ceiling in the basement. This heater is shown in detail in Fig. 8, and takes its air from the gymnasium, a certain number of windows being dropped at the top to admit outside air for this purpose. This is possible because the two rooms will not be used at the same time and it avoids the use of special ducts at the ceiling. In moderately cold weather it will do no harm to cool the gymnasium down to a fairly low temperature for the short time that the Sunday school will be in session, and in very cold weather a large proportion of the air may be drawn from the basement rooms, as it will be of a good quality during Sunday as these rooms are not in general use at that time. The large circulation coils in the gymnasium will furnish a considerable amount of heat at this time also. The temperature of the air passing through the heater is regulated by a mixing damper shown in the drawing. Air is drawn through the heater and discharged into the uptake flues leading to the room above by means of two 24-inch disk fans located as marked on basement plan and shown in detail in Fig. 9. These fans are only run during Sunday school sessions or when the room is fully occupied, heat for the same being furnished by direct radiation as shown on plans. The fans are driven by direct-connected electric motors and are started and stopped by a single switch. The heater is turned on and off by means of a three-way cock connecting with pneumatic valves in the supply and return connections, thus making the starting up of this equipment a simple matter. The air is delivered at a low velocity through two large grills, one on either side of the stage, and placed about 8 feet above the floor.

Discharge ventilation is through transoms into corridor, as indicated by arrows on the plans. The treatment of the other rooms has no especial point of interest, being the usual form of direct heating.

Rectory.

This portion of the building is warmed throughout with direct radiation, special care being taken to give the radiators symmetrical proportions and to finish them in colors to harmonize with the general color scheme of the rooms in which they are located.

The Piping System.

The entire plant is operated under a low pressure with a gravity return of condensation to the boilers. The general layout of the piping is shown on the basement plan (Fig. 4).

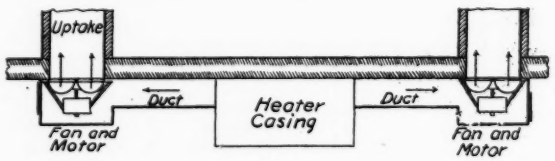


Fig. 9.

All direct cast-iron radiation is connected up on the one-pipe relief system, as this reduces the number of risers passing through the first floor rooms and is simpler to care for by the occupants. The overhead pipe coils in the basement rooms require, of course, two connections as shown on plan.

The indirect reheaters beneath the auditorum have the regular two-pipe connection commonly used for this work. The main heater at the fan is shown in detail, with the pipe connections in Fig. 10. This drawing also illustrates the

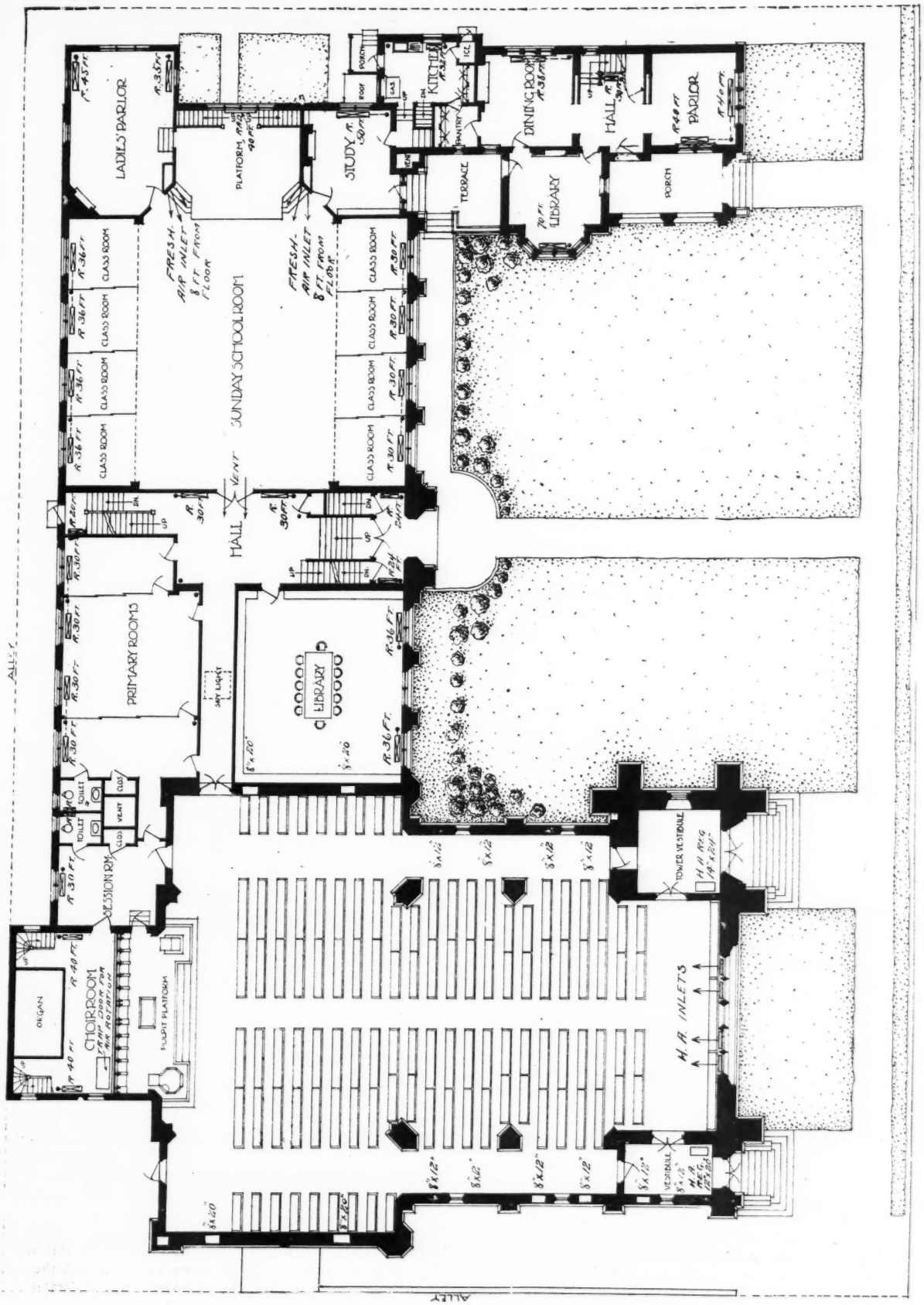

LADIES' PARLOR
PLATFORM
STUDY
KITCHEN
DINING ROOM
HALL
PARLOR
TERRACE
LIBRARY
PORCH
FRESH-AIR INLET 8 FT. FROM FLOOR
SUNDAY SCHOOL ROOM
CLASS ROOM
HALL
VENT
PRIMARY ROOMS
SKY LIGHT
LIBRARY
ALLEY
TOILET
CLOS.
SESSION RM.
CHOIR ROOM
ORGAN
PULPIT PLATFORM
H. A. INLETS
TOWER VESTIBULE
VESTIBULE

Fig. 5.

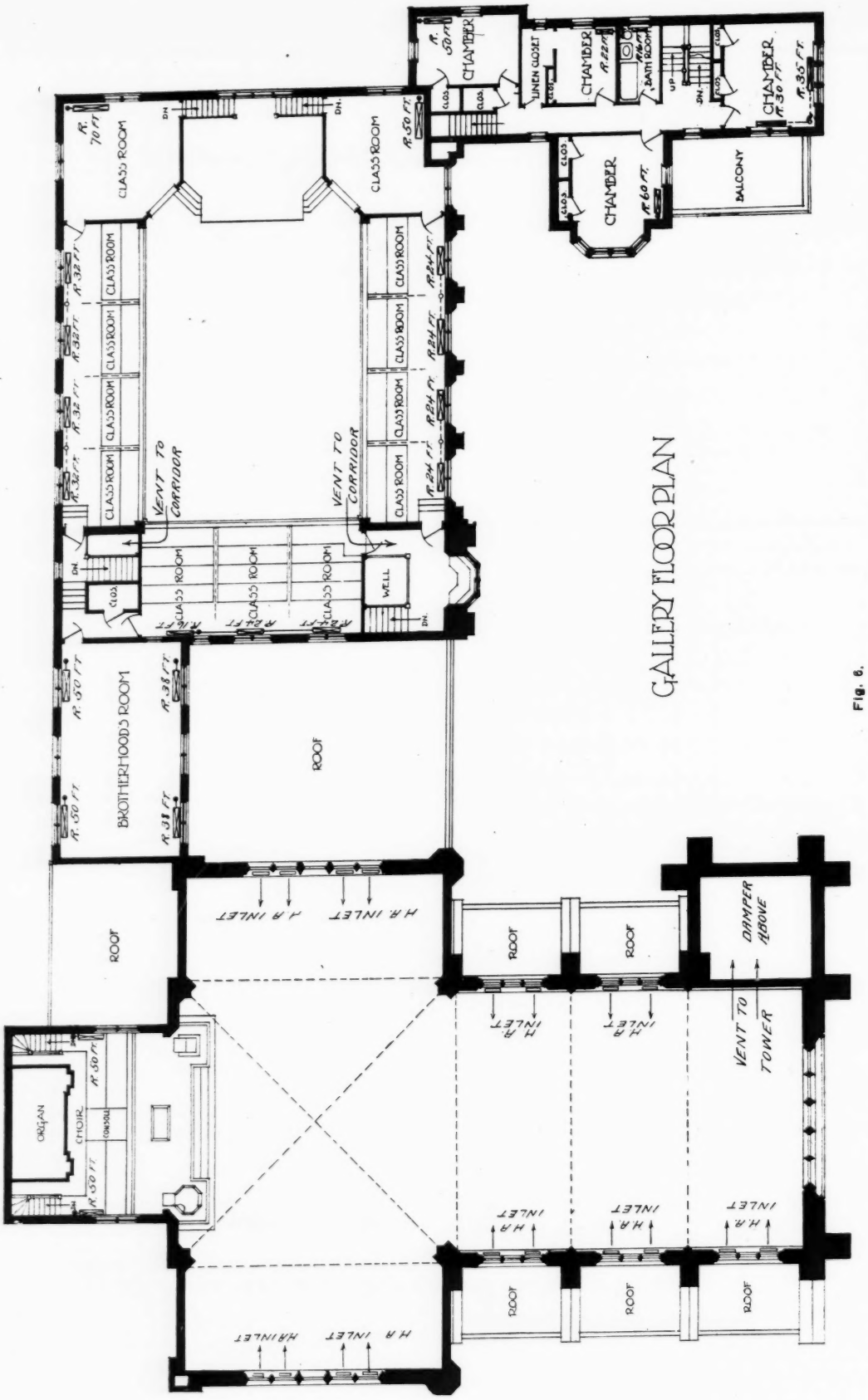

GALLERY FLOOR PLAN
CLASS ROOM
VENT TO CORRIDOR
WELL
BROTHERHOODS ROOM
ROOF
CHAMBER
LINEN CLOSET
BATH ROOM
BALCONY
ORGAN
CHOIR
CONSOLE
H.R. INLET
DAMPER ABOVE
VENT TO TOWER

Fig. 6.

arrangement of the mixing or by-pass damper previously mentioned. An electric pump and receiver returns the condensation from this heater.

It will be seen, by reference to Fig. 4, that the main fan heater, the indirect reheaters, and the direct radiation for the remainder of the building are all on separately valved lines of piping, so that they may be operated independently or together as may be desired. The returns for the direct system, and also for the reheaters, are sealed, the horizontal mains being carried below the water line of the boilers.

All steam piping and overhead or dry returns are of standard weight, while extra heavy pipe is used for the sealed returns and the vertical drops into them. Fittings are standard weight, with screwed joints in most cases, although sufficient flanges are used in the heavy boiler room piping to make it easily removable for repairs. Valves in the steam and return lines are all of the gate patterns; those 2-inch and below being of bronze, while those of larger size have cast-iron bodies with bronze trimmings. Radiator valves are of the high-lift angle type, nickel plated, with wood hand wheels. Those in the library, and also in the rectory portion of the building, have polished bodies, while all others are the ordinary rough finish.

All steam pipe sizes are computed on a basis of ¼-pound drop in pressure per 100 feet of run, which reduced to square feet of radiation gives the following approximate results, which have been used in laying out the accompanying plans:

Pipe Sizes for Direct Radiation.

Diameter of Pipe in Inches	Square Feet of Radiation Supplied
1	80
1¼	145
1½	190
2	525
2½	950
3	1,550
3½	2,320
4	3,250
5	5,800

Pipe Sizes for Indirect Radiation.

Diameter of Pipe in Inches	Square Feet of Radiation Supplied
1	40
1¼	72
1½	95
2	260
2½	475
3	775
3½	1,160
4	1,625

Computations for Radiation.

In computing the radiation for the parish house and rectory the following factors were used: Wall×20. Glass×84. Ceiling (second floor)×10.

These results for each room were added, then multiplied by 1.2 for leakage and by an exposure factor, as taken from the following table:

Exposure	Multiplier		
North	1.32	Northeast	1.22
East	1.12	Southeast	1.06
South	1.0	Northwest	1.26
West	1.20	Southwest	1.10

This computation gives the heat loss per hour from the room, in thermal units, which divided by 250, the efficiency of direct cast-iron radiation, gives the square feet of surface required. In case of basement rooms heated by overhead coils, the surface computed by this method has been increased 30 per cent to offset the effect of its location.

Ventilation of Sunday School Room.

The cubic contents of this room is 58,000 feet in round numbers. Allowing three changes per hour, calls for 174,000 cubic feet per hour, or approximately 3,000 per minute. Assuming the air supply to be heated through a maximum range of 60 degrees in the coldest weather, calls for

$$\frac{174{,}000 \times 60}{55} = 190{,}000 \text{ B. t. u. per hour.}$$

Pin radiation used under the conditions shown in Fig. 8, heating air from 10 degrees to 70 degrees, should give an

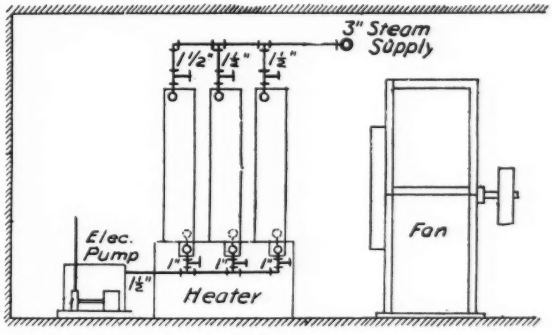


Fig. 10.

efficiency of 800 B. t. u. per square foot of surface per hour, which calls for 190,000÷800=240 square feet.

As the air is moved by two fans, each will have to deliver 3,000÷2=1,500 cubic feet per minute. As quietness of action is desirable, fairly large fans at low speed should be employed. Under the conditions shown, as regards resistance, a 24-inch disk fan should easily discharge 4.4 cubic feet per revolution, which will require a speed of 1,500÷4.4=340 revolutions per minute, which comes well within the limit for quietness of action.

Computations for Church Auditorium.

The factors used in computing the heat loss from the auditorium were taken as follows: Wall×20. Glass×84. Roof×20. Factor for leakage, 1.2. Factor for exposure, 1.16.

On this basis the total heat loss per hour is found to be 450,000 B. t. u. per hour in round numbers. The air supply to be provided by the fan is computed on a basis of 1,800 cubic feet per hour, each, for 230 occupants, or a total of 1,800×230=430,000 cubic feet per hour.

The normal temperature of the church in zero weather has been assumed as 60 degrees, and it is proposed to deliver air through the pews at such times at a temperature of 90 degrees.

It is further assumed that one-half the air supply will pass to the auditorium and one-half through the wall flues and window slots, that is, 430,000÷2=215,000 cubic feet per hour in each way. Therefore, the heat brought in through the pews, available for general heating purposes, will be that given up by this portion of the air supply in cooling from 90 degrees to the normal temperature of the church, or 90—60=30 degrees.

This quantity of heat amounts to 215,000×30÷55=117,300 B. t. u. per hour. An equal quantity of air at the same temperature passes to the indirect reheaters, carrying with it an equal amount of heat available for off-setting transmission losses in the room above. This makes a total of 117,300×2=234,600 B. t. u., leaving 450,000—234,600=215,400 B. t. u. per hour to be supplied by the reheaters.

With air reaching the heaters at 90 degrees, we may count on an efficiency of about 280 B. t. u. per square foot of surface, thus calling for a total of 215,400÷280=800 square

(Continued on Page 179.)

Is Your Bookkeeping System Elastic Enough *to* Handle Expanding Business?

By H. P. Termansen

The Office of the Jacob G. Weber Co., Chicago.

ANY plumbing or heating contractor worthy of the name is worth more as a contractor than as an office boy or clerk, yet there are a great many proprietors of plumbing and heating shops, as well as other lines of business, who spend too much of their time working and worrying over office details or smoothing out difficulties brought on by a faulty system of accounts. When the business was started, the system may have seemed all right, but a system is never good enough that cannot take care of the increased business of the future. No attempt will be made here to point out a system that will be the ideal one for any business anywhere and any time. Here and there, however, will be found a firm that has worked out a system of accounting that is particularly well suited for that kind of business, and some of these, with slight changes, can be adapted to any similar business. The following system is used by the Jacob G. Weber Company of Chicago. It may not be the best system, but it is a very good one, and is submitted through the courtesy of that firm in the hope that it may be of value to those who have found their own systems inadequate.

Some years ago the late Jacob G. Weber and his bookkeeper decided that their system was too cumbersome and ill suited for their business, and therefore set out to devise one that was not only adapted to their needs at that time, but one that would also be elastic enough to take care of a greatly expanded business. Their efforts resulted in the following system.

How the System Is Used.

In the first place, as soon as negotiations are entered into regarding a contract, a folder is placed in the temporary filing cabinet into which is put all correspondence regarding that contract, whether it be letters from the architect, prices from the wholesale houses, or any other written matter connected with the contract. On the index card of the temporary filing cabinet, the contract is listed by name and number, as, for example, No. 22, Globe Varnish Co., 100 W. Monroe St. When the contract is secured, an entry is made in a regular double entry system ledger, simply giving the name and the amount of the contract, as follows: Globe Varnish Co., $12,000.

Company Employs Stock Keeper.

As the men are sent out to the job, the material required is obtained from the stock keeper, who lists it on a yellow "Material Wanted" slip. Material not on hand is ordered from a jobber and listed with the rest of it and the name of the firm from whom it is ordered is placed in the "Short" column. The name and number of the job for which the material is wanted is also given the jobbing house from whom the material is ordered, so that the prices may be correctly entered later.

Every Friday each plumber, gasfitter, and steamfitter turns in a time sheet showing where every working hour was put in during the current week. From these time sheets are made up individual job time sheets showing the number of hours of the different classes of labor expended on each job during the week.

Loose Leaf Cost Book.

An important feature of the Weber company's system is the loose leaf cost book. For each contract there are three kinds of leaves, which are all the same sizes, 7⅜ inches wide by 9 inches long, with three perforations at one side for securing in the holder of the cost book. At the end of each week, the bookkeeper collects the "Material Wanted" slips from the stock keeper, showing the material used at the various jobs, and enters the prices and totals. Tickets for material are numbered and begin with one for each contract and are entered on a page of the loose leaf cost book by numbers and weeks. That is, as the bookkeeper has assembled all the tickets for a certain contract at the end of the week, he enters them in the cost book as follows: Tickets Nos. 17 to 24 inclusive for week of April 12th to 17th, $790.00. The total number of hours of the different classes of labor and their prices are then taken from the individual time sheets and entered on the second set of leaves in the cost book. These leaves differ

MONTHLY COST REPORT Date April 1910

NAME		PLUMBING	GASFITTING	SEWERAGE	TOTAL
Globe Varnish Co. 100 W. Monroe St.	Material	636 50	165 00	195 00	
	Labor	152 00	50 00	49 00	
	Total	788 50	215 00	244 00	1247 50
	Material				
	Labor				
	Total				

from the first ones in that they have three main columns to the right instead of one. The third set of leaves in the cost book are like the first in ruling, but unlike both the other two, which are white with red and blue lines, the third set is a light green with red and blue lines. On this third set of

TIME SHEET

Name ____ Week ending ____ 191

	WHERE WORK WAS DONE	TOTAL HOURS
SATURDAY		
MONDAY		
TUESDAY		
WEDNESDAY		
THURSDAY		
FRIDAY		

N. B.—MUST BE RECEIVED BEFORE FRIDAY 6 P. M. IN ORDER TO MERIT ATTENTION. TOTAL DAYS

leaves is entered the value of the material returned from a job during the week. This data is also obtained from the stock keeper, who records all material returned from a job on a yellow "Material Wanted" slip with the word "Credit" plainly written at the top.

Monthly Cost Report.

At the end of each month, the bookkeeper makes out a cost report. The data is obtained from the loose leaf cost book and entered on a regular monthly cost report sheet which is 11 inches wide and 15⅜ inches long and has spaces at the left for twenty-three names of firms, together with their addresses. Next to the name column are three main columns labeled, respectively, Plumbing, Gasfitting, and Sewerage. Each of these columns is subdivided for Material, Labor, and Total. The sum of the three totals is then extended to the

MATERIAL WANTED NO. ____

JOB ____

NO. ____

____ 191

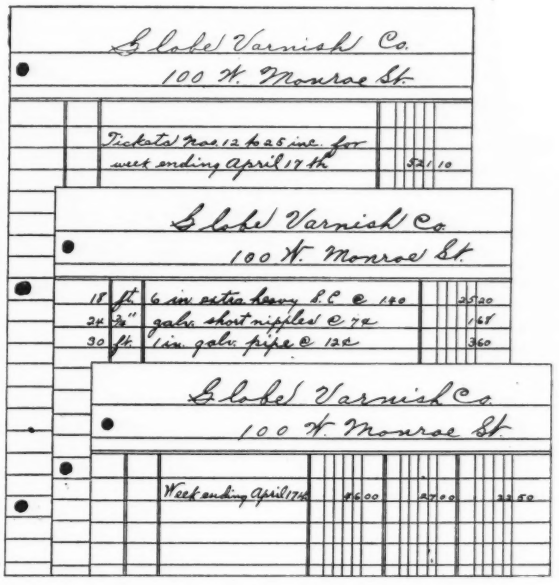
FROM?	QUANTITY			

Any unnecessary delay in ordering material will be deducted from wages. Use this slip also in ordering wagon to gather up loose material on job.

fourth main column to the right headed Total. These reports are filed by months and not with the rest of the data regarding the various contracts.

Sheets Filed in Folder.

As a contract is completed and all material and labor has been charged, the three sets of leaves for that contract are extracted from the loose leaf cost book and filed away in a folder. These folders are indexed according to name and number and are kept where they are readily accessible. All quotations and other communications regarding each contract which remain in the temporary filing cabinet until the work


Globe Varnish Co.
100 N. Monroe St.
Tickets Nos 12 to 25 inc. for week ending April 17th
52 10
Globe Varnish Co
100 N. Monroe St.
18 ft 6 in extra heavy S.C. @ 100
25 20
24 ¾" galv. short nipples @ 7¢
168
30 ft 1 in. galv. pipe @ 12¢
360
Globe Varnish Co.
100 N. Monroe St.
Week ending April 17th
16 00
27 00
33 50

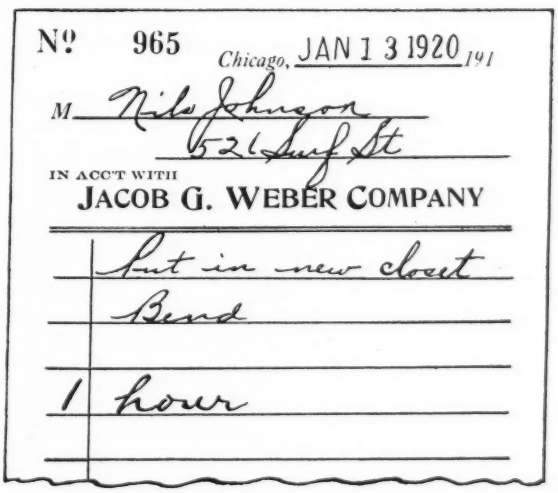
Three Forms Used in Weber System:—Material Cost Sheet (Top), Green Credit Memo (Center), Labor Cost Sheet (Bottom).

is completed are next put in a large envelope and placed in a permanent file.

How Job Work Is Handled.

The system described so far concerns only contracts. Jobbing is handled quite differently and with very little bookkeeping.

Orders for jobbing, received over the telephone or other-



Workman's Job Sheet.

wise, are entered on the jobbing book. The sheets for this book are 12½ inches long and 8 inches wide. A heavy line down the center of each sheet and three across divide a page into eight sections, giving space for listing eight jobs. On the first line in each section is the name of the person or

(Continued on Page 175.)

BON TON DE LUX PLUMBERS BACK *in* BUSINESS

Hank and Jerry Leave Old Man Flannigan and Call the New Outfit "Dolan and Olson, Plumbing and Heating Engineers and Contractors."

ME and Hank didn't get any time to make any entries in the Day Book during 1919 because Old Man Flannigan sure kept us setting one foot in front of the other one from sun-up to sun-down and sometimes we worked right on through by moon-light. All that we had to do was to get a lot of jobs installed without any material and with bullshevik help. Take it from me, this help problem is sure a corker right now. There was a time, and it wasn't over a million years ago, when me and Hank would go out on an ordinary house job and slap in the plumbing and a hot water heating plant in about seven days. Of course, Hank had a helper on the heating end of the job and we had a laborer dig a trench in the basement for the soil lines. And we didn't think that we was working very hard either. Neither did we feel that we were taking the bread and butter out of some other chap's mouth by doing a fair day's work. We were getting a fair price for our work and we delivered the goods that we were paid for.

But now. Holy smoke! You got to do as we used to do down on the farm. Down there, we always had a hired man and so dad had a team that he always used to drive; I had one that I called my own; and the hired man got what was left. Usually, they were a pretty scrubby outfit, not much on looks and still less on speed and dad used to remark that when the hired man was working in the "far" corn field a fellow had to sight over a fence post to see whether or not he was moving or standing still.

About the "Soldiers."

You see, a lot of fellows worked in the cantonments and shipyards during the late unpleasantness with old K. B., and most of this work, if not all of it, was cost plus stuff. The greater the cost, the greater the profit. Result, the contractor didn't try to hurry things too much. In fact, he couldn't. He was being pounded on the back for action and the only way that he could show action was by showing the number of men on the pay roll and the number of hours for which they were paid. If he fired the men, they went to some other camp and went right to work. There was lots of work and a scarcity of men. And now it looks as if a whole lot of the boys think that they can continue to be "soldiers."

The Irish Question.

And there has been some talk of this six-hour day stuff. Some bird from Merry Old England is there with a lot of talk about running a soap factory six hours at a shift and making lots of soap, money and contented workers. Maybe so. Maybe it works all right with soap. Maybe it works all right with the Johnny Bulls, but, take it from me, they better keep their six-hour stuff out of Ireland, because if they ever give the Irish a six-hour working day and leave them eighteen hours out of every twenty-four for eating and sleeping and fighting and thinking of their wrongs there will be a new king and queen in next to the largest capital in the world, and they will both be Irish too, and Lloyd George will have to annex a "Mac" to the front end of his family name or lose his job to Tumulty. And that would be "duck soup" for the Irish and not very embarrassing either.

The Downtrodden Worker.

In court, these lawyers are always "laying a foundation" and the other fellow is trying to punch holes in them. Perhaps that is labor's game today.. They are laying a foundation and pretty soon they will tell us that they can do just as much work in six hours as they are now doing in eight and that will give them time to sail their yachts, or fly from Minneapolis to Chicago after work and see the show and then get back by bed time, or perhaps they will be addicted to cow pasture pool, all of which takes time and money and if they can get the time they can surely get the money.

Hard to Get Materials.

But all of this is quite beside the subject, as Old Bill Shakespeare used to remark before he got to making Pears Soap. You see, me and Hank closed up the Bon Ton De Luxe Plumbing & Heating Shop and went to work for Old Man Flannigan the first day of January, 1919, and it looked like we were fixed for life, but right there is where hind sight is a heap better than fore sight, although both are pretty handy things to have around. Well, anyhow, we worked during 1919 and you can spell worked with capital letters and not go very far wrong with it either. I got side tracked on the labor question in the first paragraph and calling to mind the labor again brings up the material problem. I'll tell the world that we tried to patronize more supply houses and manufacturers during 1919 than I ever knew existed before. And salesmen, they were as scarce as hen's teeth. We were tickled white every time one of those birds kicked open the door. We didn't even object to their smoking Turkish cigarettes, blowing the smoke in our faces, and spilling the ashes on the desk or floor. And they never had to worry about getting an order. We used to order stuff until their pencils got hot and they run out of order blanks. But placing orders didn't put the stuff on our shelves or in the fitting bins. And some houses wrote us not to wire or write them about orders because it wasted our time writing them and their time filing them in the waste basket. But we managed to worry along after a fashion.

Opening Up the Old Shop.

And its all over now. During the summer, the old man took an auto trip down East to see some of his kin round Calais, Maine, and going through Chicago he stopped over for a few days. He says he stopped because he wanted to, but we got a hunch that he tried to beat some of those amateur Oldsfields on Michigan Boulevard only to find as he drew into the home stretch that his nearest competitor was a motorcycle cop, who couldn't see a joke. But anyhow, here he was in Chi and he met up with some of his old gang that he used to work with when he was learning the trade, and between them all they framed up a deal to buy up one of the oldest manufacturers of plumbing goods in the world, and so the old man came back and told us that he was going to take a whirl at the other end of the game for awhile. He made a dicker with the old bookkeeper to go along with him and he wanted to leave the business to me and Hank. He was willing to give us lots of time to pay for it, and it looked like a good

bet for us and it would have been with the old bookkeeper to make the third muskateer with us, but without him, it looked like a ship without a rudder. Then, to cap the climax, me and Hank got to rummaging around in the basement one day, when there wasn't overly much to do, and bimeby we came across the old Bon Ton De Luxe sign and right under it there was a box of old trinkets and in that box we found a sack of "Bull" smoking and a couple of cobs and so we filled em up and sat down on a couple of tool chests and Hank says, "This sure is good, it seems like old times." My pipe wasn't pulling very good and so I just grunted and it must have surprised Hank because he don't usually get much chance to talk when I'm around and he went on to say that "Being a merchant plumber means that a fellow has to wear good clothes and keep 'em clean and smoke seegars or tailor-made cigarettes, but a boss plumber can smoke a clay or a cob and

We Found a Sack of Bull Smoking and a Couple of Cobs and So We Filled 'Em Up and Sat Down on a Couple of Tool Chests, and Hank Says: "This Sure Is Good, It Seems Like Old Times."

get by with it." And so we talked it over pro and con and me and Hank figured that our best play would be to open up a little shop again and not try to hog the world and all, and so here we are again.

Nothing Doing on "Chi."

The old man wanted us to go to Chi with him and work around the plant and become salesmen, but the queen of bungalow says that there was nothing doing on that Chi stuff. Some fellows say that the supply end of the game is the best end of this business, and maybe it is, but just the same it looks to me like a four-wheeled Ford has got it on any three-wheeled Packard that I ever saw. When they get to the three-wheeled stage, they are usually in the ditch waiting for help, but if they got four wheels they will travel, even if the passengers have to get out and push once in a while. Old Bill Woolley and his gang of efficiency sharks been pushing the old bus along for almost a year now and they better be looking for seats because the first thing they know she is going to get such a start that they won't have any more pushing to do and they'll be left behind unless they grab hold and get seats. There sure would be the deuce to pay if somebody tried to run this business on three wheels. Hank says "What do you mean three wheels? Looks to me like you're wheely." So I told him that this trade was divided four ways, the journeymen, the master, the jobber and the manufacturer; and each of them is leaning on the other fellow but don't want to acknowledge the corn.

Old Man Flannigan suggested that we call the new outfit "Dolan and Olson, Plumbing and Heating Engineers and Contractors," and so that's the way the new sign reads. Hank was strong for using the old sign and it looked as if he might win out on it, particularly after we called on a couple of sign painters to find out what a sign would cost, but one of the helpers went down in the basement to start a little fire and he chopped up the old sign for kindling, and so when Hank found it was gone he give in to the new name.

New Store Features Side Lines.

So we rented a nice little store and the old bookkeeper has been giving us the Trade Extension Bulletins and the Efficiency Course, so we sent the T. E. B. a sketch of our store and basement and they came back with a layout and we had the store fitted up to correspond with their scheme. It sure is a bird, too. A few classy fixtures and some ordinary ones. A show window with a real bath room outfit in it and the other window rigged up to display smaller fixtures and appliances. We even got a vacuum cleaner and a rug on the floor and the idea is to throw dirt on the rug or wipe feet on it, etc., and then clean it all up with the vacuum cleaner. We sold one the first day. The Queen of the Bungalow came down to give the place the OO and she spotted that cleaner and Hank gets busy and gives her a demonstration and she says she'll take it and she did. That means that I have to pay for it, but its all right because she's had everybody in the neighborhood over to look at it work and we got three or four good prospects right now.

(To be Continued.)

Dr. D. A. Lyon, of Bureau of Mines, in an address before members of the Franklin Institute and the Philadelphia section of the American Chemical Society, stated that gold mining today is practically a failure, and operators are turning from gathering of gold to many of the baser ores.

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftsman and a pleasure for us to pass on the information.

HOT WATER SUPPLY IN FIFTEEN-STORY BUILDING UNSATISFACTORY.

Editor, "Domestic Engineering":—Enclosed is a sketch of a plan for a hot water supply system in a 15-story building, 150 feet long, with each riser about 15 ft. apart.

The system works fine with the exception of the risers in the far end of the building marked H, L, I and M which do not work properly. The water in the risers marked B, C, D, E, F and G is very hot at all times, and they generally keep the water around 160 to 180 degrees. All the risers have two 1½-inch gate valves on them, one in the basement and one in the loft. If a valve is closed in the basement, water can be procured through the risers H, L, I and M, but this stops the continuous circulation. There is a pressure of 90 pounds on the gauge above the boiler, this being supplied from two large tanks in the loft.

Riser M never did circulate properly, while H, L and I have just started to give luke warm water. There is a back pressure on the last four risers, and the check valve near the boiler is functioning properly. If I were to put a check valve on them, do you think that the risers marked G, J and K would get the the weight on them, or if I put a

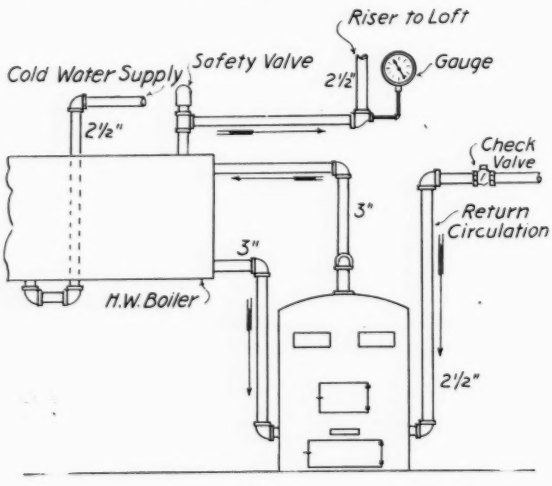


Fig. 1.

check valve in the return main, between G and J, it would divide the weight of the water in half, as there is a greater weight in the basement than in the supply pipe in the loft? If the valve on riser I, in the loft, is closed, it will stop the water from running from the spigot in basin on the fifteenth floor. Riser I is the last one to be taken off the main in the loft with a 2½-inch by 1½-inch ell, turned down with a 1½-inch by 6-inch nipple and a 45-degree ell, and is connected the same way in the basement only on the top of the return main.

The cold water supply only registers 80 pounds in the basement along side the hot water gauge in the boiler room.

Pennsylvania. H. S. C.

Correspondent's trouble seems to be due to lack of capacity in the circulating main. Fig. 1 illustrates the hot water heater, hot water storage tank, and connections according to the sketch submitted, and Fig. 2 the layout of the piping in the loft. The layout of the piping in the

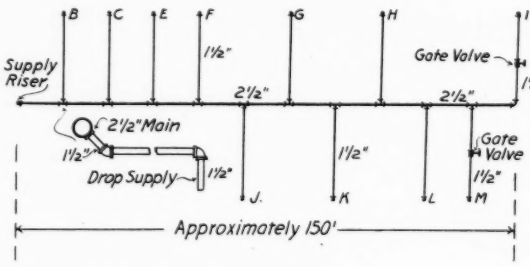


Fig. 2.

basement is practically a duplicate of the piping in the loft, except that the return branches connect into the top of the return main while in the loft the branches are taken from the bottom of the main by a 45-degree connection using a 45-degree elbow and a 6-inch nipple. A detail of one of these connections is shown on the illustration Fig. 2.

There seems to be sufficient capacity in the circulating main to supply the first seven branch connections but not the last four, there being eleven in all. The four risers marked H, L, I and M do not receive their required amount of hot water from the main. We do not advise the use of check valves as suggested by correspondent. There seems to us to be two possible methods of curing the trouble. The first, and probably the most satisfactory, is to enlarge the circulating pipe. The second method is to choke the circulation to the drop risers B, C, E and F, and possibly G and J. This may be done by bushing the tees on the circulating pipe and making a smaller connection to the drop risers. All of these connections now are 1½-inch. Possibly the branches to the drop risers B, C, E and F could be reduced to 1-inch and the branches to the drop pipes G and J to 1¼-inch.

The method of increasing the size of the circulating pipe would be expensive but the latter method would not involve any considerable expense for time or material.

If this job was not a circulating system, no doubt the 2½-inch main would prove sufficient to supply as many fixtures as would be used at any one time, but being a circulating system it is necessary to consider the capacity of the pipes supplied rather than the requirements for the fixtures connected.

The flow and return connection from the boiler to the hot water storage tank is 3 inches in size, as indicated on Fig. 1. Two openings of the boiler are connected into a 3-inch top header and from the rear end of this header the supply is taken to the tank. The 3-inch return or circulating pipe from the tank drops down and connects with a return opening of the boiler.

A PROBLEM IN GARAGE HEATING.

Editor, "Domestic Engineering":—I have installed a hot water heating system for one of my customers, and having secured satisfactory operation of the system, the owner wishes the installation of about 80 sq. ft. of radiation in his garage.

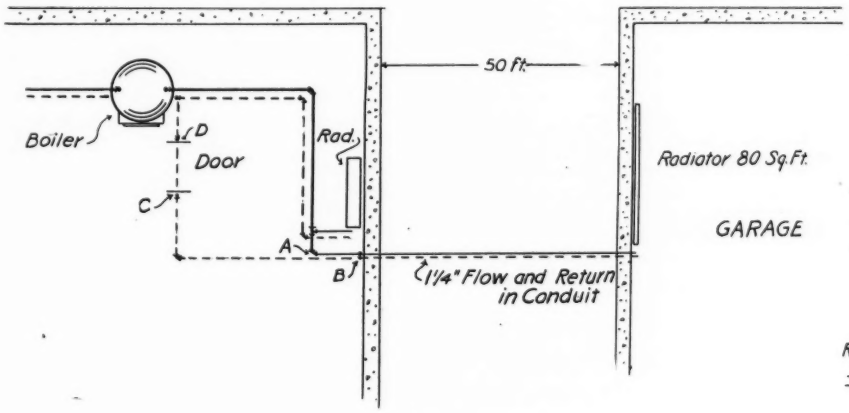


Fig. 1.

The garage is on the ground level about 50 ft. from the house. The ceiling in the basement of the house is 3 ft. above the ground, and to go under the ground at least 2 ft., I have contemplated on covering the pipe with a good frost-proof covering, slipping 4-inch tile over that and cementing the tile. I would like to know if this would be sufficient protection.

I have planned to branch off from the flow pipe with a 1¼-inch pipe on a 45-degree drop, low enough to pass under ground to the garage, feed the radiator flow to the top and the return on the bottom of the same end, and then back to the basement and follow the floor line back to the boiler on which I have left a 1¼-inch opening on the return to the boiler inlet. As a door must be passed, I intend to drop the return below the floor in the width of the door and come up again on the other side of the door and into the boiler return. Is this, in your opinion, correct, or do you think I had better bring the flow pipe in the garage up higher with a vent on the top or have the radiator vented on top opposite the flow inlet? The sketch as shown herewith is the way I had planned to make the installation.

Nebraska. C. K.

The sketch submitted with the above communication is drawn partly in plan and partly in elevation. We have illustrated by Fig. 1 the installation as we understand it from the description and sketch.

We may advise at the outset that correspondent will not be able to circulate hot water to the garage radiator in the manner described as there will not be a sufficient difference in specific gravity between the flow and return to cause the water to circulate.

The force or motive power which causes the circulation in an ordinary hot water heating system is very slight. This is easily comprehended by considering the weight of two columns of water of equal height but differing in temperature. Supposing that the temperature difference is 20 degrees or, for example, the temperature of the flow is 170 degrees and the return 150 degrees, with a height of 25 ft. the excess weight of the cooler water in the return over that in the flow is but little more than 1 ounce per square inch of sectional area.

There is only one method by which a circulation to the garage radiator may be maintained, and this we have illustrated by Fig. 2. The flow must be taken to such a height that the excess of weight in the drop pipe will force the circulation. The flow, or circulating loop, shown on the

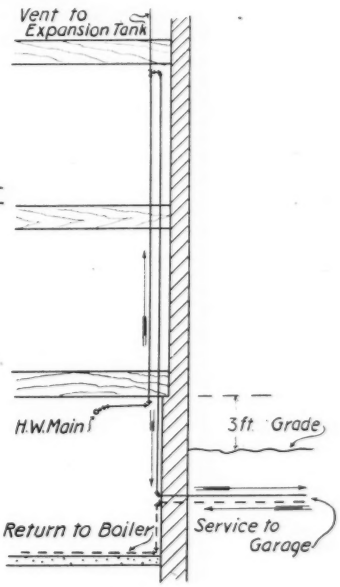


Fig. 2.

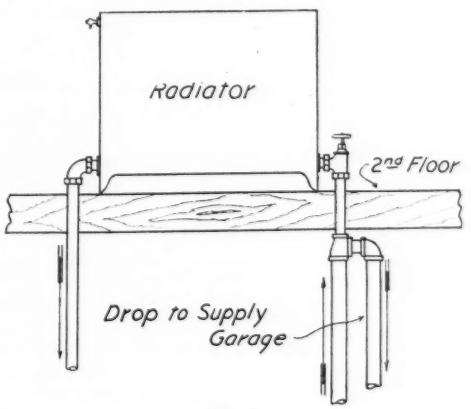


Fig. 3.

illustration, should be taken to the ceiling of the second floor of the residence. It should be vented at the top by a small connection to the expansion tank, or it may be vented through

(Continued on Page 178.)

ONTARIO SOCIETY *of* DOMESTIC SANITARY *and* HEATING ENGINEERS *in* ANNUAL CONVENTION

Wm. J. Woolley Addresses Meeting on Trade Extension—John Wright Submits Valuable Report on Sanitary Legislation—T. J. Minnes Re-Elected President

WELL attended sessions featured the ninth annual meeting of the Ontario Society of Domestic Sanitary and Heating Engineers, which was held Thursday, Friday and Saturday, April 8th, 9th and 10th, at the Canadian Foresters Building, in Toronto.

Many interesting talks on the work of the association and pointers on the betterment of the trade were delivered in good, comprehensible form by those men who are striving for a new world for the plumbers. William J. Woolley, secretary-manager of the National Trade Extension Bureau, gave one of his addresses on the work of that bureau and the way in which the sanitary engineer can profit by the use of trade extension methods. He also told of the methods in vogue in the States and how the work of his organization has progressed and built up better business for the domestic sanitary engineer.

Thursday Morning Session.

The executive committee and twelve members, representing the officers and chairmen of the different committees, held a meeting at 10 o'clock on Thursday morning, the officers in attendance being: T. J. Minnes, president; George E. B. Grinyer, vice-president; Thomas Maxwell, treasurer, and Garrett F. Frankland, secretary.

At this meeting the work for the following day was outlined.

Thursday Afternoon Session.

A conference of manufacturers and jobbers with the executive committee preceded the opening of this session, which was called to order at half past two. President Minnes opened the meeting with an address to the manufacturers and jobbers, outlining the thoughts that had been in the Society's mind concerning the support of those two branches, which was vigorously sought. He stated that the manufacturers were overlooking one of the greatest sales forces that they had in not educating the plumber and making him his salesman and his shop his showroom. The reason for the gathering that afternoon, he said, was to try and get together in some manner and lay out a plan by which the plumber could be educated as a salesman and better the plumbing business. That a different spirit prevailed than former meetings where the manufacturers and plumbers have gathered, was readily seen when President Minnes, in conclusion, stated: "Now gentlemen our cards are face up on the table, and we have nothing up our sleeves, we simply realize our lack of knowledge and wish your support, and we believe that we can work in harmony to educate the plumber and elevate the plumbing craft in general."

Feeling that this was so different from what the manufacturers had expected and that it might take them off their feet, President Minnes called on several other members to express their opinions in order to give the other side a chance to catch its breath.

Hugh Wallace, representing the Standard Sanitary Mfg. Co., in responding said that he was glad to see that the plumbers were beginning to take an interest in the idea of bigger business and the general uplift of the plumbing trade.

Fred Armstrong, of the Port Hope Sanitary Co., spoke of the plan which had been started by the manufacturers nine months ago, but which, owing to insufficient help and backing, they were unable to carry out.

After discussing the subject from all angles, it was agreed to appoint committees to represent both sides so that they could get together and formulate some plan by which they could carry on the proposed proposition. The committee to represent the manufacturers was appointed as follows: Fred Armstrong, Port Hope Sanitary Co.; Mr. Rook, Page Hersey Co.; H. S. Harwood, James Robertsen Co.; C. J. Stevens, Empire Brass Co.; Anges Groff, Galt Brass Mfg. Co.; George Fisher, Canadian Brass Co.

The plumbers also elected a committee of six men to meet the manufacturers at their convention on Friday. At the conclusion of the Thursday afternoon conference an invitation was extended to the manufacturers and jobbers to attend the banquet on the following evening. It was also announced that William J. Woolley would deliver an address on Trade Extension at two o'clock on Saturday afternoon.

Friday Morning Session.

The Friday morning session opened at the Society's headquarters, with the appointment of Sam Adams as sergeant-at-arms.

Following the reports of various officers and committees, the report of the president was read, covering the year's work and the progress made in organizing and in enrollment of new members. New members, according to the report, totalled 110, 65 having been secured in Toronto and 45 in other cities. The report follows in part:

The President's Report.

The following suggestions that were handed over to the executive for attention, have been taken care of as follows:

A Bumper Convention: This convention is the result of our efforts in this regard.

Rearrangement of fees on a sliding scale to include manufacturers, jobbers and contractors: This has been discussed, but to date nothing definite has been done, nor should it be attempted until we have a stronger organization.

The adoption of a Standard Set of Books: There has been nothing accomplished in this regard.

Adopt Better Cash Discounts: We have made no attempt in this matter and should not until our society should be of sufficient strength to handle same.

Standard Apprentices Working Rules: The Apprentice Committee has handled this in a satisfactory manner, which you will find in its report.

Standard Specifications: There has been nothing done in this respect.

Pipe Manufacturers to Adopt Standard Resale Price for Pipe: The vice-president took this matter up in Guelph with

the Page-Hersey people, and was unable to get any satisfaction from them. Your president made an investigation in this regard while in Montreal at the Canadian convention, and was given to understand that nothing could be accomplished, one reason that was explained being that there was more pipe sold, by far, outside the plumbing trade than in it.

The Central Office: Nothing further has been done in this regard other than consideration being given it by the Toronto branch of the society.

Restrictions of the Plumbing Trade Through Legitimate Channels—Manufacturer to Jobber to Consumer: The executive have been endeavoring to get a joint conference with regards to this. As it is of very recent date and on account of our lack of strength until now, there has been little progress made.

Standard Resale Price on All Plumbing Goods and Standard Guarantee: The same answer applies to this as to the one previous.

A Forceful Advertising Campaign: This matter is under consideration at the present moment. But as yet nothing definite has been done.

The Open Price System: This is in force in a few localities, and we believe is proving quite satisfactory, but it is a thing that requires confidence which must be established before it can be a real success.

The above are the recommendations taken from the report of the chairman of the Educational Committee, G. E. B. Grinyer, at our last convention.

Report on Sanitary Legislation.

John Wright, chairman of the Sanitary Legislation Committee, must be highly commended for his excellent report, concerning the activities of the Province of Ontario in the plumbing field, which was read at this point. Dealing with the question of plumbing throughout Ontario, Mr. Wright pointed out that "there is a very decided need for a general regulation respecting plumbing for the whole province, subject to amendment by the municipalities now having regulations in force," and that "a provincial regulation would overcome a great many of the difficulties now experienced and would insure a satisfactory type of equipment and fittings for the rural as well as the whole organized urban municipalities." A dissenting opinion, relative to "unscrupulous" exploitation by those who are installing inferior water systems in the rural districts, exists in the plumbing trade, he said, and that it was "interesting to note that the plumbers are not in sympathy with this movement."

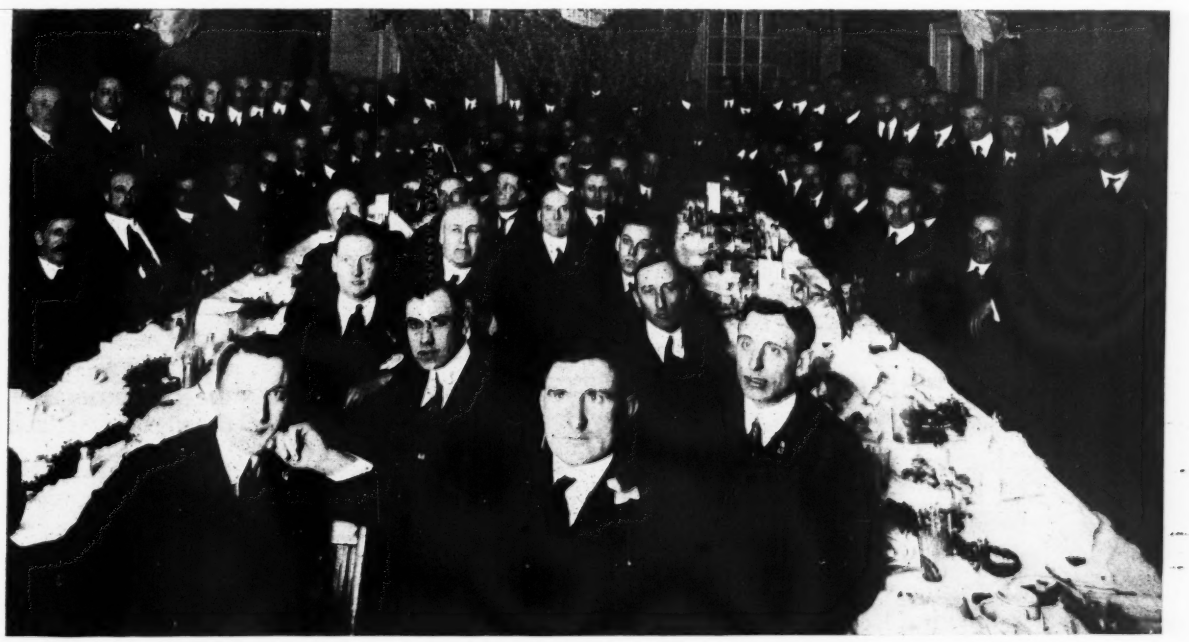
John Wright.

The personnel of the Board of Health came in for its share of comment and the laws governing it were in some instances denounced, especially where it was found that aldermen were allowed to "sit on the local Board of Health." This, it was said, "defeats the very object and intent" of placing the board under the Provincial board.

Co-operation of real estate companies and plumbers, the latter to receive weekly compensation for repairs done on many apartment buildings, was also discouraged. This would cause, he said, a "deception under the above conditions which we have done so much to stop."

Reference was made to the new plumbing by-laws of Lon-

(Continued on Page 176.)

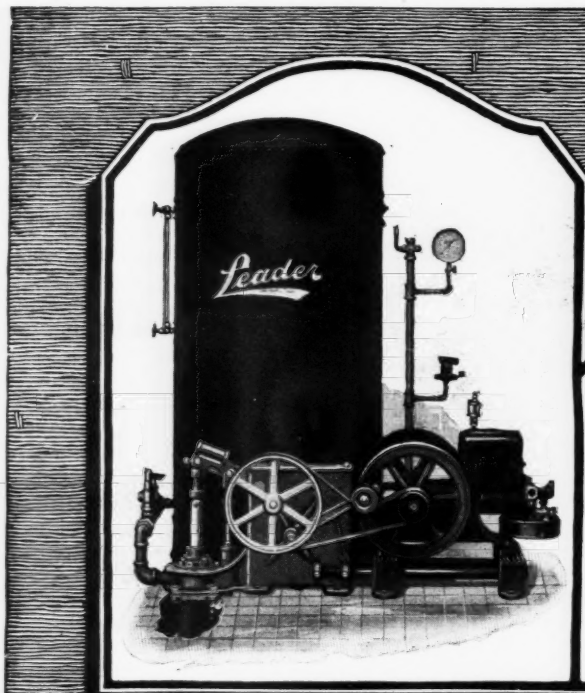


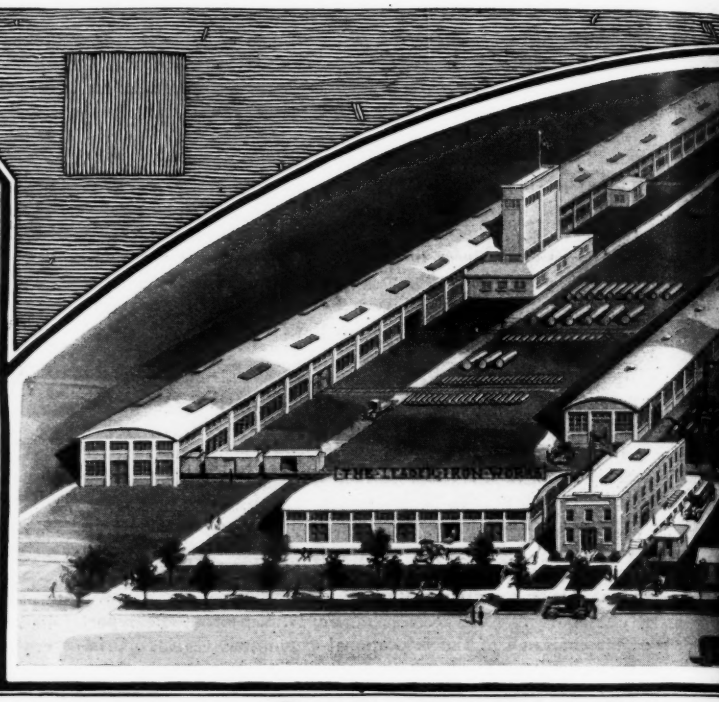
The Annual Banquet of the Ontario Society of Domestic Sanitary and Heating Engineers, Held in Toronto, April 9, 1920.

Other Important Reports.

Vice-President George E. B. Grinyer announced his going out of the plumbing business and expressed regret that he would therefore have to resign. The report of Secretary Garrett F. Frankland was then read. It showed that the association, during the past year, had a membership of 224, distributed throughout 44 municipalities.

George Clapperton, in the Apprenticeship Report, showed what was being done in the way of schools and how they had planned a night school course whereby a young man could go two nights a week and take up the different things necessary in making a good domestic engineer of himself.





Decatur Plant of Leader-Trahern affiliation. The

Three-way SATISFACT

Satisfaction and responsibility to consu for the Leader Iron Works great

HERE has been evolved one of the most complete and efficient factory production organizations in the country. It is the only organization building tanks and pumps and completing the water system as a unit in its own factory.

ALL raw material comes in at one end of the factory, and goes out as a complete unit at the other end. The machinery handles plates from 14-gauge to one-half inch in thickness.

Tanks from 10 inches to 10 feet in diameter, of any length that can be loaded on a freight car, tanks of 30 to 20,000 gallons, suitable for the smallest to the largest system. In this same factory every pump from the smallest to the largest size is made.

These Three Fa

The *Leader* Iron Works h the three *factors* which giv the consumer, i. e. to giv the right time, at the right

1—The right factory and right system *right.*

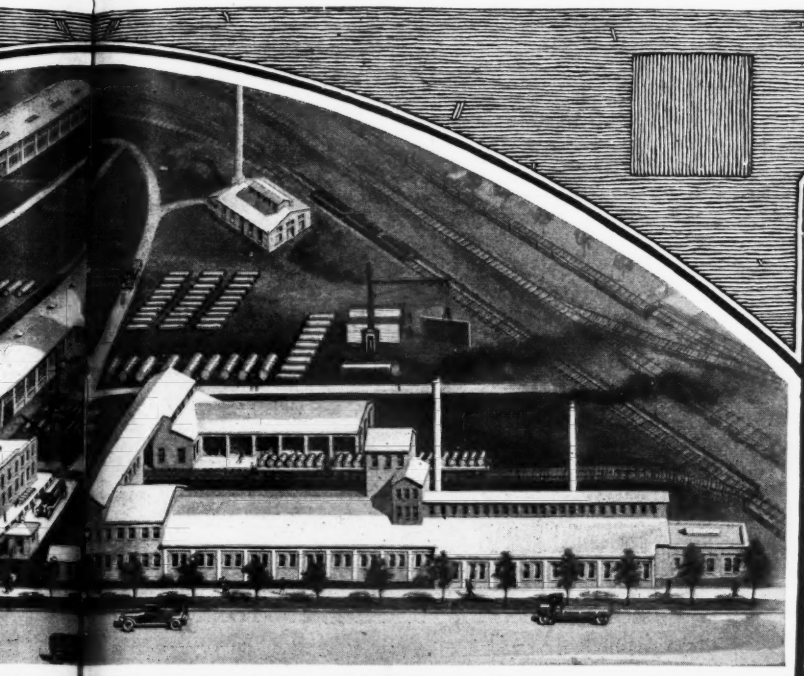
2—The right distributors, l mutual interests, to dist

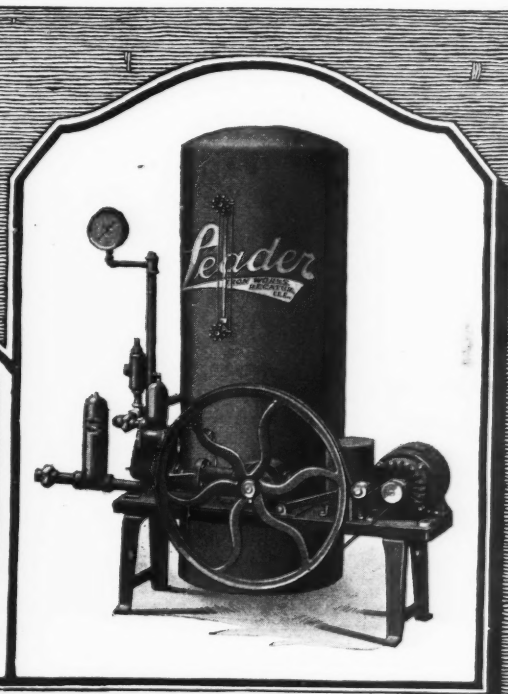
3—The right dealers to gi consumer.

Established 1903

Leader

Tanks, Pumps and Power Equipment





on. The unit now being constructed at Rockford, Illinois.

CTN Built This Great Factory

consu—to dealer—to distributor—are the reasons eat tre modern, scientifically efficient factory.

ee Fa of SERVICE

Vorks hected to the highest point hich gisfaction and confidence to to giv the right water system, at e right

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EVERY *reason* why the Leader is best for the consumer is a definite positive reason why it is best for dealer and distributor.

Leader Distributors all through the United States are of the highest character. Men big enough—broad enough to know that the finest, most profitable business policy is to sell *satisfaction.* And Leader dealers are of the same character.

Through farm paper advertising in the territory of every Leader dealer we are *creating* a big harvest of orders for Leader dealers and distributors. You will find it more profitable to sell the Leader line than to compete against it. Get in touch with our distributor, or write us.

LEADER IRON WORKS

Factory: Decatur, Illinois, U. S. A.

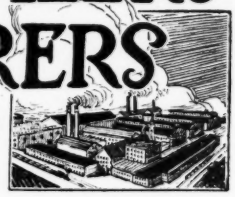
NEW YORK: 21 East 40th Street CHICAGO: 327 South La Salle Street

Tanks, Pumps and Power Equipment

Leader

Established 1903

AMONG THE WHOLESALERS AND MANUFACTURERS



INCREASES CAPITAL STOCK.

Jenkins Bros., Inc., of New York, has increased its capital stock from $750,000 to $5,000,000.

The Peerless Unit Ventilation Co., New York, has increased its capital stock from $25,000 to $100,000.

BUILDING NEW ADDITION.

The H. W. Johns-Manville Co., New York, has awarded the contract for the erection of a one-story brick addition 151x641 ft., to its plant at Manville, N. J.

TO MOVE ITS NEW YORK OFFICE.

The Imperial Brass Manufacturing Co., of Chicago, has made arrangements to move its New York office on May 1st to Suite 605, Longacre Building, Forty-Second Street and Broadway, New York City.

ELLIOTT WATER HEATER CO., INC., IN NEW LOCATION.

The Elliott Water Heater Co., Inc., of Brooklyn, N. Y., has moved its general offices and display rooms to 9 Willoughby Street in that city. The company's factory and warehouse will remain at 1246 Myrtle Avenue.

DETROIT MARVEL BRASS MFG. CO. IN NEW HANDS.

The Detroit Marvel Brass Manufacturing Co., at Sherman and Rivard Streets, Detroit, Mich., has been purchased by Harry Weinberger and associates. Additions in floor space and equipment, now being made, will enable the new owners to increase the company's production fully 500 per cent by July 1st. Mr. Weinberger has been elected to the office of president and general manager.

PLUMBING AND HEATING EXHIBITS AT "OWN YOUR HOME" EXPOSITION.

An "Own Your Home" Exposition was held in the First Regiment Armory, Broad and Callowhill Streets, Philadelphia, during a week beginning April 15th, under the auspices of the Philadelphia Real Estate Board. Among manufacturers and jobbers of plumbing and heating goods who had carefully arranged displays were: Haynes Selling Co., Abram Cox Stove Co., Crane Co., Fleck Bros. Co., Spencer Heater Co. and Bridgman Bros. Co., of Philadelphia.

ANNUAL MEETING OF WESTERN TRADE GOLF ASSOCIATION.

At the directors' meeting of the Western Trade Golf Association, held at the Stratford Hotel, Chicago, on Friday, April 16th, it was decided to call the annual meeting a week later, at an a la carte luncheon in the Pine Room of the same hotel. This was held at noon on Friday, April 23rd, when, in addition to the election of officers, the 1920 tournaments were also discussed. A report of the meeting will be published in the May 1st issue of "Domestic Engineering."

CENTRAL METAL WORKS CHANGE HANDS.

The Colonial Foundry & Machine Co., of 32 Portland Street, Boston, Mass., has taken over the business of the Central Metal Works, at Chelsea, Mass., and will manufacture plumbers' brass goods in this concern's plant. Frank M. Mills, 110 High Street, Boston, will act as the company's distributor.

TESTIMONIAL DINNER TO A. S. FRAMPTON.

A number of personal friends of A. S. Frampton, who recently resigned after long service as Chicago manager of the Wheeling Steel & Iron Co., Wheeling, W. Va., gathered together on Saturday evening, April 24th, in Chicago, to honor him with a testimonial dinner on the eve of his departure from the Windy City. The dinner and ceremonies accompanying the event were successful and appropriate in every way and showed a sincere warmth of feeling towards Mr. Frampton. He is going to St. Louis to become associated with his brother in the automobile business.

ANNUAL CONVENTION OF NATIONAL DISTRICT HEATING ASSOCIATION.

The eleventh annual convention of the National District Heating Association will be held at the La Salle Hotel, Chicago, May 25th to 27th. The meetings and exhibits will be held on the 17th floor of the hotel, insuring the best accommodations in every way. An unusually attractive program has been arranged, and in addition to the reports of many standing committees, there will be two addresses from Chicago and the following papers: "Heat Losses from Underground Pipe," by Professor John R. Allen; "Technical School Training for the Heating Profession," by Professor J. D. Hoffman; "Advantages and Disadvantages of Steam and Hot Water Heating," by R. V. Stureman. A paper on Bleeder Turbines in Heating Service will be announced later. President J. C. Hobbs and Secretary D. L. Gaskill urge every member of the association to make his plans now to attend the gathering.

THE ENGINEERING ADVERTISERS' ASSOCIATION PROTEST ADVERTISING TAX BILL.

The bill proposed by C. J. Thompson, Representative in Congress, to tax advertising, was discussed at length by the members of the Engineering Advertisers' Association at its monthly meeting at the Great Northern Hotel, Chicago, on April 13th, and it was unanimously agreed to enter a vigorous protest against this proposed legislation as being unsound and unfair to business.

The passing of such a bill would tend to curtail the advertising of some manufacturers, which would cause more or less depression in business, and as the crying need of the

hour is for more production, it would be most unwise to interfere with business now by passing the proposed tax bill.

The members of the Engineering Advertisers' Association represent about one hundred of the leading manufacturers of engineering products in the Middle West and their opinions on such an important subject should be seriously considered.

FIRE DESTROYED ONLY ICE CREAM CAN DEPARTMENT.

The John Wood Manufacturing Co., of Conshohocken, Pa., announces that the fire which visited its plant last week was confined to its ice cream can department, and will in no way curtail production in the Company's range boiler and pneumatic tank departments. While the ice cream can department was completely burned out, the Company expects to have it rebuilt within five weeks, as officials placed rush orders for materials and equipment the day after the fire.

EASTERN TRADE GOLF ASSOCIATION'S ANNUAL MEETING.

The annual meeting of the Eastern Trade Golf Association was held Wednesday noon, April 14th, at the Building Trades Club, New York City. Some thirty members were in attendance for the luncheon which preceded the meeting proper.

Captain J. Barton Garfield read an entertaining report of the association's field activities during the 1919 season. This will be printed and distributed to the members.

C. N. Brizse and George A. Suiter were elected to honorary membership.

After much discussion it was decided to increase the number of meets during the season from three to five, and the 1920 tournament committee will be instructed to arrange for the greater number.

Two new members were elected: E. F. Conroy, of the Central Tube Co., and Arthur Purnell, of the Youngstown Sheet & Tube Co. This brings the total membership up to the limit of 150.

No decision on the time and place for the first meet was made, though Mr. Wood offered Shackamaxon in New Jersey, and Mr. Broatch offered the courtesy of Ardsley, for any one meet during 1920.

Donations of prizes for the season were made by Mr. Broatch, of U. S. Sanitary Mfg. Co.; L. A. Quackenboss, of Warren Webster & Co., and Retiring President F. K. Chew, of "The Metal Worker."

Officers elected for the ensuing year are: President, W. M. Cosgrove, American Radiator Co.; vice-president, W. W. Hubbard, W. G. Cornell Co.; secretary, R. G. Bookhout, and captain, J. Barton Garfield. Governors: Messrs. Ross, C. A. Geaghegan, Broatch, Gilmour and Rutzler.

"INCREASED PRODUCTION."

A national program for stimulating production as a means of insuring stable financial and business conditions will be put forward at the eighth annual meeting of the Chamber of Commerce of the United States, to be held at Atlantic City, N. J., April 26 to 29, 1920.

This meeting has been designated an "Increased Production" convention. It will bring together representatives of the more than 1,300 commercial and industrial bodies composing the National Chamber's membership, for a thorough discussion of ways and means of increasing output to meet the universal demand for goods.

The world problem today is production. Even in the United States, where the national life was little disturbed by the war in comparison with less fortunate countries, increased production is necessary for the solution of great problems.

The duty of America is to produce. The responsibility lies on all alike, the manufacturer, the merchant, the farmer, the worker. The contribution of each of these will be laid before the meeting for use in preparation of the program of increased production.

Increased production means a larger share of the necessities and comforts of life for our own people; it means more for Europe, where people are dying for lack of food and clothes. In it lies the only means of making up the wastage of war. Work alone offers a cure for many of the ills left by the war.

The general subject of "Increased Production" has been divided, for purpose of discussion into sub-topics, the first of which will be treated at the convention, is the government in relation to production. Under this heading, there will be taken up the effect of anti-trust laws and taxation.

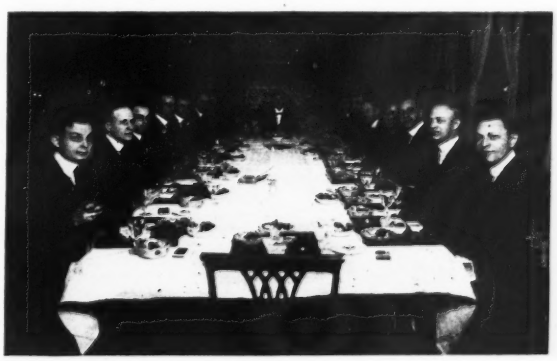
Adequate transportation and communication is one of the principal requisites of production. This subject will have a prominent place in the discussion.

International finance and its relation to world production and distribution is another subject that will be gone into. One session will be devoted to agricultural production.

The question of labor in relation to production, it is realized, is one of the most important that will come before the convention. Labor's share in an increased production program will be discussed by representatives of both employers' and employes' organizations.

"ROYAL PLUMBER OF JAPAN" ENTERTAINS SALES REPRESENTATIVES IN NEW YORK.

T. Suga, known as the "Royal Plumber of Japan," recently visited this country for the purpose of purchasing more than a half million dollars' worth of plumbing goods for his six branches in Japan. In a statement which he made through



"Royal Plumber of Japan" Entertains Sales Representatives in New York.

his interpreter, G. Fujimura, he said that there is room for extensive business relations between Japan and the United States, especially in plumbing material, since Japan is now desirous of having the most modern sanitary improvements.

Mr. Suga further stated that he has been purchasing his requirements of plumbing material, like many others in his country, from England, and he has to thank some of his native friends for calling attention to the fact that this country was more modern in its sanitary products and prices more attractive. The importance of supplying our products with English or Whitworth threads was emphasized by Mr. Suga.

Strange as it may seem, Mr. Suga introduced an innovation

as a large buyer. Heretofore, it has been customary to entertain the buyer, and in coming as the "Royal Plumber of Japan," it seems that Mr. Suga should have been royally entertained by the manufacturers here. But instead of this, Mr. Suga did the entertaining, and he is shown in the accompanying engraving at the "Royal Host" at a very elaborate farewell Japanese dinner, followed by a very interesting entertainment at the Nippon Club, New York City.

Seated around Mr. Suga (reading from left to right) are: J. K. Law, manager, seat department, Brunswick-Balke-Collender Co.; C. G. Wall, Sloan Valve Co.; P. G. Maich and H. J. Meyers, Burnett-Larsh Mfg. Co., C. B. Cobaugh, Brunswick-Balke-Collender Co.; J. F. Murphy, manager, New York City Branch, Sloan Valve Co.; Toyojiro Suga, plumbing contractor, Osaka, Japan, and plumber to the Imperial Japanese Household, Tokio; G. Fujimura, New York City; F. A. Pisano, Walworth Manufacturing Co.; R. E. Steere, Crane Co., export department; M. Takata, New York correspondent, the Osaka "Mainichi" and Tokio "Nichinici"; D. Ebbets and D. S. Warth, Sloan Valve Co.; William G. Solomon, manager, Eastern Branch, Josam Manufacturing Co.

NEW HOME OF CLEVELAND ENGINEERING INSTITUTE.

The new home of the Cleveland Engineering Institute has been established in a large residence at 8120 Euclid Avenue, Cleveland, Ohio. Expansion has been found necessary in order to carry on the increased work of the Institute's correspondence course in heating and ventilation, which is designed to cover every phase of engineering practice. The instruction is maintained under the progressive class plan, similar to that in use at many technical colleges, each class progressing in the study of subjects consistent with their ability

and understanding. Every class is under the direction of a competent instructor who is experienced in both the theoretical and practical phases of the science. The text and form of instruction pertaining to engineering practice are flexible, being kept constantly astride with modern requirements and development, through the medium of an advisory board. This is composed of the following: Dr. E. Vernon Hill, president of the American Society of Heating and Ventilating Engineers; M. William Ehrlich, of New York; James B. Lund, of Chicago; Carleton F. Tweed, Minneapolis; and George W. Roberts, director of instruction. H. Carleton Hewitt, of Cleveland, has charge of the commercial interests of the Institute, and emphasizes the important need to instruct the trade regarding the practical use and application of scientific principles and their values in connection with the industry.

L. Bruce Fulton, Chicago manager of the wholesale department of the Standard Sanitary Mfg. Co., Pittsburgh, Pa., is on a Western trip and will go as far as Denver. He plans to be back early in May to attend the pipe meeting in Chicago.

Charles J. Ruehrwein has just been appointed sales representative for the Pfau Manufacturing Co., of Cincinnati, O., to cover Chicago and vicinity.

Leon Block, president of the Sanibrass Corporation, Brooklyn, N. Y., is at the present time on a business trip to the important jobbing centers on the Pacific Coast.

George B. Baldwin, western representative of the Stockham Pipe & Fittings Co., Birmingham, Ala., was in Detroit last week.

C. A. Greene, representative of the Nye Tool & Machine Works, Chicago, was in Michigan last week calling on the trade.

J. W. Shellhamer, of the N. O. Nelson Manufacturing Co., St. Louis, Mo., was calling on the trade in Decatur, Ill., this week.

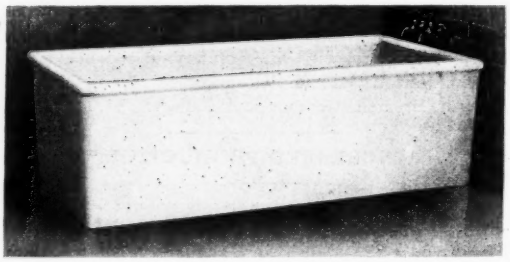
H. W. Evans, engineer and manufacturer's agent, 1115 Chamber of Commerce Building, Chicago, has just incorporated his business under the name of the Evans Valve & Piping Co.

SHOP EFFICIENCY BIGGER BUSINESS **NEW** SELLING OPPORTUNITIES REPLACEMENT WORK

EQUIPMENT AND IMPROVEMENTS

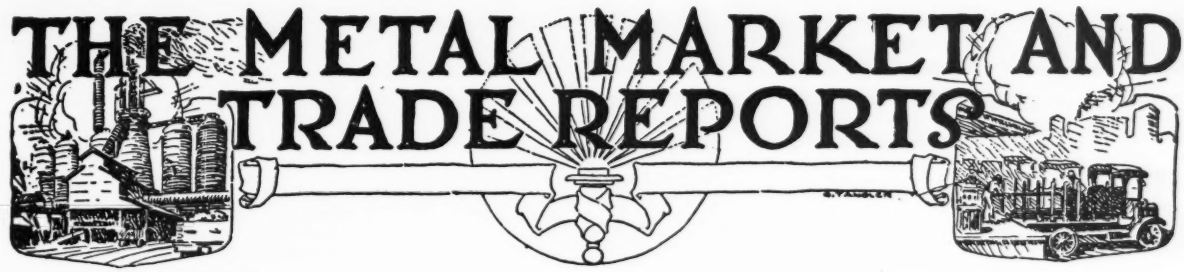
A Concrete Bathtub.

Concrete bathtubs are now available and are made in right-hand, left hand corner, and recess patterns. They are made in standard sizes of 5 ft. and 4 ft. 8 inches, of gray or white concrete, their net weight being about 480 lbs. They are made chiefly of grey concrete, with the same general finish as laundry tubs, but the white product has a smooth finish resembling marble. A test was made on one of the concrete tubs, filled with water at 210 deg. F. and held there for 30 minutes



without injury to the enamel, seepage through the walls or structural change in the concrete. The walls of the tub are 1 5/16-inch thick. The company manufacturing these tubs also makes concrete shower bath receptors, weighing about 375 lbs., concrete closet tanks, concrete laundry trays, and white enameled concrete combination laundry tub with kitchen sink. The catalog describing these products also shows roughing-in connections for the bathtub and shower receptor.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

Steel production throughout the country is not believed to exceed 25 per cent as a result of the strike's effects, and a further reduction is expected if freight movement does not improve in the next few days. Some of the leading independent producers are idle or working at greatly reduced rates, and even the Steel Corporation, which usually keeps a good percentage of reserve stocks on hand, has reduced production materially. However, the feeling in the industry is that this stagnant situation will clear up in a day or two and that freight movement will come close to normal by the end of the week. The expression "normal" is merely used to qualify shipments up to the time the embargoes were placed and certainly not the "normal" conditions that would satisfy the industry.

Last Tuesday the American Sheet and Tin Plate Company opened its third quarter business with jobbers at the old Industrial Board prices of March 31, 1919. These are: for blue annealed sheets, 10 gauge, $3.55 per 100 pounds; black sheets, 28 gauge, $4.35; galvanized sheets, 28 gauge $5.70; tin plate, 11-pound weight, $7 per base box. The entering of business is really a process of alloting tonnage. In sheets and tin plates, as in other steel products, the Steel Corporation has many customers of independents, and in a market like this such consumers place as large a proportion of their requirements with the Steel Corporation as can be accorded them.

The last unfilled tonnage statement of the Steel Corporation showed that the policy of selling ahead, and at the old Industrial Board prices, was being pursued with vigor in March, as the unfilled obligations increased during the month by 389,994 tons, this being in spite of the fact that shipments in March were about 96 per cent of rated capacity, against February's 90 per cent.

While nearby sales of iron are at a standstill, producers have encouraged inquiries for last half, and orders have been satisfactory despite the strike situation which has tied up all shipments and practically demoralized the prompt market. Consumers seem to be anxious to cover their third quarter requirements, not knowing how hard the market may become on account of the reduced production and complete upset of delivery programs. There were no coal or coke deliveries all last week. Hopes are held out that conditions will become more normal in the next few days, as hundreds of striking railroad men returned to work on Saturday and freight movements became more active, although the iron industry is still at a standstill. The demand for freight cars is so great that the congestion in producers' yards is not expected to become lighter for several weeks. Substantial shipments are not expected before late in the week. New England coke ovens have been offering substantial tonnages at $16.40 delivered, or about $14 oven, but uncertainty of delivery keeps buyers out of the market. Prompt coke is extremely scarce and consumers have only shown interest in second half delivery, which is being contracted for by some ovens at Connellsville on an $11 basis. Prices for pig iron are as follows:

No. 2X, Philadelphia	$47.35@48.35
No. 2 Southern, Birmingham	42.00@43.00
No. 2, furnace, Chicago	43.00@43.50
Basic, Valley, furnace	43.00@44.00
Bessemer, Pittsburgh	43.40

Copper.

One of the dullest weeks in copper since the beginning of the year was the one just ended. Business was practically at a standstill, mainly because of the strike, which made consumers and large buyers nervous of prices and uncertain of deliveries. Refineries reduced production over 50 per cent, and the underproduction has reached such figures as to warrant the predictions that the market will advance in the next few days. Principal producers, who are quoting 19¼ cents for spot and second quarter, decline to contract for any shipments later than July, and the quotation is made of 19½ cents for this month. Whereas the little interest shown in other non-ferrous markets would undoubtedly cause easier prices, this fact is not true of copper because of the power of its statistical position. Before the strike developments caused consumers to withdraw from the market the export outlook was excellent, with the Copper Export Association working on tentative plans to finance foreign credits in co-operation with big copper interests and leading banks. The conclusion of these export plans is not abandoned by any means, as latest reports are to the effect that they are progressing, but their realization is undoubtedly postponed until such time as more interest is manifested in the market.

Tin.

Tin went the way of the other non-ferrous metals and, following a firm week ending April 9th, the market declined slowly in New York in conformity with increased weakness in London. The drop in New York prices would have been more severe had it not been for the rise in sterling. American interests figured prominently all during the week in arbitrage, and these sellers made a bear market in London by selling bargain tin bought up over here. From the spot quotation of 64 cents on Monday in the New York market, and 63 cents for off months, prices eased off during the week and finally closed on Saturday at 62½ cents for prompt and 61½ cents for later shipment.

Lead.

Lead finished a quiet week with the outside market purely nominal because of lack of interest by buyers and sellers. The principal producers seem to be the only interests to have done any substantial business during the week, with sales of close to 2,000 tons. The open quotations by second hands and holders of resales are 8.90 cents to 9 cents New York spot, and 8.625 cents to 8.75 cents East St. Louis, but without takers. Buyers are out of the market and sellers show no anxiety to dispose of holdings.

Zinc.

The zinc market was disappointing last week after a flurry of business the week before, when close to 3,000 tons were sold on the Metal Exchange in two days. The indifference of both buyers and sellers was only similar to that experienced in the other markets, as the strike situation caused dealers to withdraw from the market temporarily. Prices were easier ending the week, with 8.40 cents asked for all positions, East St. Louis delivery.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 50-ton lots)	33 cents per lb.
Antimony (Chinese and Japanese)	10½ cents per lb.
Solder, No. 1	40 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	16 to 16¼ cents	17¼ cents
Copper, light	14¾ to 15 cents	16 cents
Brass, heavy	10¼ to 10¾ cents	11 cents
Brass, light	8½ to 9 cents	9¾ cents
Brass turnings	9½ to 10 cents	11 cents
Lead, heavy	7½ to 7¾ cents	8¾ cents
Tea lead	6 to 6¼ cents	7¼ cents
Scrap zinc	5¼ to 5½ cents	6¼ cents
Solder joints	13 to 13¼ cents	14¼ cents
Mixed babbitt	10 to 12 cents	13 cents
Composition turnings	14 to 14½ cents	15½ cents
New brass clippings	10½ to 11 cents	12 cents
Tin foil	42 to 44 cents	46 cents
Cast aluminum	24½ to 25 cents	26 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

Heavy yellow brass	12 to 12½ cents	13½ cents
Brass, light	10 to 10¼ cents	11¼ cents
Brass borings	14½ to 15 cents	16 cents
Brass turnings	9½ to 10 cents	11 cents
Red brass	16½ to 16¾ cents	17¼ cents
Copper, crucible	17 to 17½ cents	18¼ cents
Copper, heavy	16 to 16½ cents	17½ cents
Copper, light	14¼ to 14½ cents	15½ cents
Lead, heavy	7¼ to 7⅜ cents	8¼ cents
Tea lead	4¼ to 4¾ cents	5½ cents
Zinc	6 to 6½ cents	7 cents
Solder joints	11½ to 12 cents	13 cents
New aluminum clippings	27 to 27¼ cents	28½ cents
Cast aluminum	26 to 26½ cents	27½ cents
No. 1 pewter	41 to 43 cents	44 cents
Block tin pipe	55 to 57 cents	58 cents
Tin foil	46 to 48 cents	50 cents
Mixed babbitt	9½ to 10½ cents	11½ cents

The Pipe Market.

The prevailing scarcity of all kinds of pipe is generally known, and the situation has naturally been hurt by the railroad strike. The mills continue to be many months behind with orders, and, with jobbers paying premiums in order to obtain goods for their customers, prices are uncertain from week to week.

RAILROAD STRIKE APPEARS BROKEN.

March Building Permits Show Increase.

Chicago, April 21.—Prospects for an early settlement of the "outlaw" railroad workers' strike are considered good in the Chicago district at this time. Traffic in some instances is said to be resuming to the extent of 70 per cent of normal activity, and there is every indication of the strike going on the rocks. No one can deny how serious this insurgent movement has hit industry and construction, which are so dependent on adequate transportation to and fro. Producers in the plumbing and heating field have had their share of grief during the strike, which had added confusion and delay to progressive programs of production.

Little news of an encouraging nature is obtained from supply houses in the plumbing and heating field, and no changes in prices are reported. Factories continue to operate under difficulties and raw material and labor costs remain at their high levels.

Scarcity of Soil Pipe

At this particular time there is a marked shortage of 4-inch standard soil pipe. The foundries give as a reason, the fact that conditions of labor make it impossible to keep up anything like a normal production of standard pipe. Inexperienced help and resulting losses in casting are largely responsible for the shortage, says an Iowa jobber.

The conditions, so far as extra heavy pipe and fittings are concerned, is somewhat easier and the foundries are insisting that every car shipped to a jobber include about equal amounts of standard and extra heavy material.

At the present time in this territory the demand for extra heavy soil pipe and fittings is not equal to that for standard weight. As a result our particular stock of extra heavy pipe and fittings is in better shape than that of standard material. We believe it possible that in the near future the demand for standard pipe will greatly exceed the available supply, in fact the condition practically exists today.

It is our suggestion that dealers figure extra heavy pipe in estimating jobs even though standard weight can be used. If this is done, the dealer will be safeguarded against loss in case he is obliged to resort to the use of the extra heavy material when the installation is made.

Cannot Get Materials in West.

Building projects have forcibly been checked down in the West Coast territory because of the difficulty of filling orders at the eastern mills for plumbing, small pipe, fittings, and vitroware. These mills announce that their records have not yet been opened for the third quarter. Only for previous protection between West Coast jobbers and Colorado steel mills the nail supply would be under the present 50 per cent in that territory. Youngstown mills are the only ones to date with which West Coast jobbers can get any reasonable promise of delivery on small pipe, says "The American Contractor."

March Building Permits.

Despite material handicaps, March building permits and March contracts awarded show a decided pickup from the first two months of the year, and it must be remembered that both January and February showed a healthy volume of activity.

Reports from 203 cities to "The American Contractor" show the estimated valuation of March permits $159,085,909 as compared to $66,571,272 for March, 1919. This gives a gain of 139 per cent over a period of last year which in turn showed a 71 per cent gain over March of 1918.

Estimated valuation of "The American Contractor" building statistics for the month of March during the period 1914-1920 is as follows:

Year.	No. cities.	No. permits.	Estimated value.
1920	203	37,720	$159,085,909
1919	203	31,353	66,571,272
1918	161	20,211	35,051,897
1917	116	23,406	79,284,262
1916	119	26,218	84,384,464
1915	119	28,932	71,342,907
1914	64	.....	61,393,181

Indianapolis, Omaha, Atlantic City, Tulsa, Portland, Ore., and Dallas are cities showing losses.

Substantial gains over February activity are shown in Los Angeles, San Francisco, Washington, D. C., Atlanta, Chicago, Des Moines, Louisville, Baltimore, Boston, Lowell, Detroit, Minneapolis, St. Paul, Kansas City, St. Louis, Newark, Buffalo, Akron, Cleveland, Columbus, Toledo, Philadelphia, Milwaukee, and in every borough of New York City excepting the Bronx, which shows a slight loss.

Only 25 cities out of 203 show losses as compared to March, 1919, and comparing 187 cities with February, 1920, totals only 40 show losses.

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

Arcade Steam Heating Co., 126 West Kinzie Street, and E. Baggot Co., 19 East Lake Street, will install the heating and plumbing, respectively, in the $40,000 residence and garage that is to be erected for John Hertz in Gary, Ind.

L. H. Prentice Co., 330 South Sherman Street, will install the heating system, and M. J. Corboy Co., 178 West Randolph Street, will install the plumbing in connection with alterations to the residence and garage of William O. Goodman at 1349 Astor Street.

The Jackstone Plumbing Co., 2808 West Van Buren Street, will install the plumbing, and L. H. Prentice Co., 330 South Sherman Street, the heating in the one-story and basement automobile service station and display room for the Standard Steel Auto Co., at Twenty-eighth Street and Michigan Avenue.

John A. Tresch, 7723 South Halsted Street, has secured the contract to install the plumbing in the $10,000 service station which will be built for the Hendrickson Motor Truck Co., at 206-208 South State Street.

United Plumbing & Heating Co., 3012 West Roosevelt Road, has been awarded the plumbing and heating contract on the addition and remodeled sections of four stores at Homan Avenue and Roosevelt Road.

Walter J. Blythe, 2400 West Division Street, is to install the plumbing system in the $200,000, six-story storage warehouse for the Jackson Express & Storage Co., at 5949-5953 West Madison Street. Gallaher & Speck, 215 West Congress Street, have secured the heating contract on this building.

Otto Chvoy, 5918 West Twenty-sixth Street, Cicero, has been awarded the contract to install plumbing in the $15,000 public garage that is to be erected at 6307 West Twenty-sixth Street, Berwyn.

Walter Davidson, Hinsdale, is to install the heating plant in the remodeled residence and garage of H. G. Hunn in that town.

Other Cities in the State.

The Karr Supply Co., Belleville, is to install the heating and plumbing systems in the $200,000 high school addition that is to be erected in that city.

H. G. Chesman, Shannon, has secured the plumbing contract on the $20,000, one-story bank building which is to be erected for the People State Bank in that city.

Showroom of the Peoria Plumbing Co., 112 South Munroe Street, Peoria, Ill.

John P. Lowry, Bloomington, has the contract to install the plumbing and heating in the new addition to the St. Joseph Hospital, work on which will start soon. The contract price for this job amounts to $51,000.

James T. Power, 316 East Adams Street, Springfield, will install the plumbing and heating fixtures in the following buildings now under construction in that city: Shank Apartments, consisting of six flats; Jefferson Bank Building, and the plumbing in the $100,000 factory building for the Sangamo Electric Co. Remodeling of the plumbing system in the Illinois Watch Co.'s plant will also be done by Mr. Power.

Missouri

St. Louis and Vicinity.

The first decision under recently enacted laws of the St. Louis Building Trades Council was one involving sheet metal workers and carpenters. The decision will probably be a precedent for the determination of such controversies in the future. The dispute concerned the ventilating job in connection with the General Motors Co.'s plant being erected in St. Louis. Carpenters protested the jurisdiction of setting fan-shafts then being done by sheet metal workers. The president's decision favored the carpenters and the council decided to uphold the protest.

The first advertisements in St. Louis' $50,000 campaign to obtain new industries in the St. Louis district will appear in May in several national publications. Full page advertisements will appear for the seven months following May, except that none will be inserted in August issues.

Here are the new lines of industries sought: Shoe laces and findings, cotton spinning and textile mills, dye stuffs, steel and copper wire, machine tools and tool machinery, automobile accessories and parts, malleable iron castings, farm implements, rubber products, screw machine parts, locomotive works, blast furnaces, cork products and small hardware.

Half of the fund later will be spent in appeals to specific industries. Trade papers that will reach certain classes of manufacturers will be utilized also. A secretary will be employed to gather further information any prospective new comer desires and to otherwise concentrate on him.

Indiana

Indianapolis and Vicinity.

Activities in the plumbing and heating trades in Indianapolis are still practically at a standstill as a result of the plumbers' and steamfitters' strike on April 1, and there is no indication now that work will be resumed soon. About eight or ten of the fifty or more master plumbers in the city have signed agreements with the unions, it is understood, but there has been no tendency on the part of the others to make any advances whatsoever. Proprietors of the local plumbing and heating establishments affected by the strike do not appear to be losing any sleep over the situation and apparently have resolved among themselves to let the strike take its course. They have been using the lull in activities to get caught up with office matters and other routine work. Material that has been ordered for delivery at this time is tied up on account of the railroad situation, and it is doubtful if much work could be accomplished, if the strike were settled. All in all, the plumbing and heating business in Indianapolis is about as quiet as it has ever been in the last few years.

Several Indianapolis plumbing and heating contractors are

WOOSTER CHINA

PLATE NO. 55

One Minute, Please! Mr. Jobber

Are You

getting your share of Closet Business on New Factory Buildings?

By introducing and featuring the Wooster Factory Closet Bowl with Seat Integral and Non-Soiling Features, you will be creating an advertising campaign which will mean a healthy increase in sales.

The elimination of the wood seat on water closets in factory installation is a step forward in factory sanitation.

Write Today for Prices

The Wooster Sanitary Co.

Clarksburg, V. Va.

PLANTS:

Clarksburg, W. Va.
Fredericksburg, Ohio

MANUFACTURERS OF
Plumbers Vitreous China Earthenware

preparing bids for the plumbing and heating contracts on the new home to be erected for the Indianapolis Lodge of Elks at 26-30 East Vermont Street. The building will cost about $500,000.

Other Cities in the State.

East Chicago's new filtration plant, which the East Chicago & Indiana Harbor Water Co. is now constructing at a total cost of $500,000, will be in operation about the first of June, according to W. W. Hadley, the water company's engineer. Labor troubles, strikes and delays in shipments have been responsible for the slow progress made and the delay in getting the plant in operation. The new plant will serve East Chicago and Indiana Harbor.

Approximately $600,000 will be expended this year for new school buildings in seven townships in Allen County, according to an announcement made this week by D. O. McComb, of Fort Wayne, county superintendent of schools. The program calls for the erection of modern and up-to-date buildings, and will no doubt furnish considerable activity for the plumbing and heating contractors of Fort Wayne.

The contract for the installation of the plumbing, heating and ventilating systems in the new community building, to be erected at Kendallville for the Methodist Church, has been let to Charles Lee & Son, of that city.

William Zimmerman, of Whiting, has been awarded the contract for the installation of the heating and plumbing systems in the oil station to be erected at East Chicago, Ind., for the Schaefer Oil Co. The building will cost about $15,000.

L. R. Mendelson, President of the Hotstream Heater Co., Cleveland, O.; J. H. Wiebers, Otterbein, Ind., and R. A. Scheffer, of the Burnett-Larsh Mfg. Co., Dayton, O.—From "Domestic Engineering" Photo, Taken at the Recent Convention of the Indiana Society of Sanitary Engineers, Held in Richmond, Ind.

The Hoosier Construction Co., of Connersville, has received the contract for the installation of plumbing and heating systems in 100 residences that are to be erected for the Locke Realty Co., of Connersville.

The contract for the installation of plumbing and heating systems in a new $150,000 theater building at Vincennes has been awarded to Victor Knauth, of that city.

Pennsylvania

Pittsburgh and Vicinity.

The W. N. Sauer Plumbing Co. has closed a contract with the Diamond National Bank for the installation of plumbing, sewerage, gas fitting, etc., in the annex at Fifth Avenue and Graeme Street, at a contract price of $15,913.

The Iron City Heating Co. has the contract with the Diamond National Bank for all labor and material for installing steam heating and ventilating systems in the annex at a contract price of $20,330.

The A. W. Miller Co. has received a contract for all labor and material for installation of plumbing system in a residence at Leetsdale, Pa. Consideration $1,323.

A permit has been issued for five new residences and garages, two-story buildings, on Northumberland Street, to the Pittsburgh Housing Corporation, at an estimated cost of $125,000. H. Miller & Sons Co. have the general contract.

Bids are being received for alterations and additions to the Maternity Hospital at 549 Neville Street.

Bids are also being received by W. L. Clausse for a library at Sewickley.

Among the building permits issued for the week were the following: $12,000 frame and stucco house at Evaline near Harriett Street; $14,000 brick house at 2422 Beechwood Boulevard and a $10,000 brick veneer house at 1211 King Avenue.

A. W. Miller Co. has secured the contract to install plumbing in a residence that is to be erected in Leetsdale.

McGinness Smith Co., 435 Water Street, will install the heating and ventilating systems in the high school building at Munhall.

A movement is on foot by the Pittsburgh Builders' Exchange to form a new or reorganize the old State Builders' Exchange organization, which at one time was a most successful association. Ohio, New York, Iowa and Nebraska and other states have such organizations and they have been found to be a great benefit to the building trades. Owing to the success achieved in other states, an endeavor will be made to place Pennsylvania among the foremost.

The Wm. M. Kingsbury Engineering Co., Ross Building, Cleveland, has just opened a branch office in Pittsburgh, at Room 605, 230th Building, Fifth Avenue.

Massachusetts

Boston and Vicinity.

The Heating & Piping Contractors' Boston Association, Inc., held its annual meeting and dinner at Young's Hotel, Boston, on Tuesday evening, April 13th, with a large attendance of members. A pleasing feature of the evening was the presentation to retiring President Frank A. Merrill of a handsome mahogany desk clock in appreciation of his services during the past two years. Officers were elected as follows: President, J. W. Woodward, of Lynch & Woodward; vice-president, Ralph S. Franklin, of A. B. Franklin, Inc.; treasurer, Fuller C. Scofield, of Scofield, Campbell Co.; secretary, C. W. Sisson; directors, H. E. Barber, of the Barber Co.; H. E. Whitten, of the H. E. Whitten Co; T. A. Ridder, of T. A. Ridder Co.; P. J. McMurrer, of the McMurrer Co.; John P. Gallivan, of Isaac Coffin Co., and Elmer L. Sollis, of the Power Heating & Ventilating Co.

The season for annual meetings of local master plumbers' associations continues, the most recent being those of the Newton and Brookline associations, both comparatively new organizations but among the most flourishing in the state.

The Newton association feels particularly proud just now because one of the members, G. Wilbur Thompson, has just been elected president of the state association. Mr. Thompson was present in his dual capacity of member and state president at the annual meeting held on April 15th and gave an interesting talk on association work. The election of officers resulted in the choice of William H. Hockridge as president. A. T. Purdy, vice-president, and Charles Kieser, treasurer. C. G. Carley, who has served as secretary during the past year, declined re-election, although his fellow members were loath to permit him to give up the work. He finally consented to continue in office temporarily until a successor could be found. The association has twenty members.

The Brookline association held its annual meeting on April 14th and elected Frank B. Connor president; Herbert Smith, vice-president, and Frank Muldowney secretary and treasurer. Mr. Muldowney succeeds Russell Gowdey, who recently was elected secretary of the state association of master plumbers. The Brookline association, although only a little more than a year old, has made rapid strides forward and the membership roll contains the name of virtually every master plumber who is eligible for membership. Meetings are well attended and much interest is shown in the association work.

The petition filed in the legislature early in the session asking that the department of public health be directed to investigate and report as to advisability of revising and codifying rules and regulations of the various cities and towns relative to plumbing and house drainage and like subjects, has been approved by the legislative committees on public health and ways and means. The latter committee, however, has reported a bill slightly different from that outlined in the petition. The new bill is so worded as to permit the health department to make such an investigation rather than requiring it to do so. The new bill follows:

A Hinge that adds another selling point to a superior closet seat

should justify your consideration. The "Never Split" seat, with its bolt, nut and washer construction, equipped with our patented

ACID-RESISTING

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NON-CORROSIVE

Hinge

furnished to match the seat, sells itself.

"Never Split" sales are increasing so rapidly that considerable difficulty is experienced keeping pace with the demands of our regular customers.

We hope soon to have increased facilities, but we recommend applying for any part of this as early as possible if you expect to need our seats.

Furnished only with the "NEVER SPLIT" SEAT

NEVER SPLIT SEAT CO.
EVANSVILLE, IND., U.S.A.

The RUSSELL
Perfect Automatic Air Valve

is the one air valve that can be depended upon to give satisfactory service under every known heating condition.

In the shell of the valve is a sealed phosphor bronze float, partially filled with a sensitive fluid which vaporizes at 180 degrees F. After the air has been expelled from the radiator and steam reaches the float, the heat vaporizes the liquid, expanding the top and bottom and closing the valve against the loss of steam.

In case the radiator fills with water, there is enough buoyancy in the float to close the valve. Two openings in the base do away with interference between steam and water in entering or leaving the float chamber.

No perishable parts. No siphon needed. Ask for details.

W. A. Russell & Company

332 S. Michigan Ave. CHICAGO

63 W. 37th Street NEW YORK CITY

"Resolved, that the department of public health may investigate and report to the general court, not later than the 10th of January in the year nineteen hundred and twenty-one, as to the advisability of revising and codifying the rules and regulations of the various cities and towns of the commonwealth relative to plumbing, house drainage and like subjects in order to promote uniform and standard systems of plumbing and drainage. The report shall contain drafts of such legislation, if any, as the department may deem necessary after the said investigation, to promote the health and comfort of the people, and to provide for economy in plumbing and draining."

Other Cities in the State.

Ray O'Connell, formerly employed as a chauffeur for the city of Holyoke, has joined his brothers George W. and Harold P. O'Connell in the plumbing business. They also will conduct a motor car business, and Ray O'Connell will have charge of this part of the business.

E. P. Hirst, of New Bedford, has been awarded the contract for plumbing in an addition to the Job C. Tripp school house at Fairhaven.

The contract for plumbing in the Charles W. Morey School, at Lowell, has been awarded to Thomas E. O'Day Co., Inc., of that city, on a bid of $14,965.

Iowa

The Van Dyke Plumbing & Heating Co., 1111 Walnut Street, Sioux City, has been awarded the contracts to install the plumbing in the four residences to be erected for H. R. Howell on Sheridan Street.

The Wilson Plumbing and Heating Co., Washington, will install the plumbing, and Stewart & Hayden, Burlington, the heating in the new $60,000 high school which is to be erected in Cotter, Iowa.

Washington

Seattle and Vicinity.

A survey of the real estate and building situation in Seattle shows that the chief factor in the situation is the matter of homes. Despite the fact that industrial demands have dropped off, following the shut-down of the larger steel shipyards, very few families have left the city, and the number of vacated houses is still practically nil. While the building activity is not as spirited as it was at this time a year ago, the demand for apartments, rooms and houses continues without let-up.

An interesting building feature in the Puget Sound District is the number of church projects on the boards for construction this summer.

The National Guard plans to erect armories at Walla Walla and Everett for which plans are now being prepared.

Plumbing and heating contractors have been comfortably busy, and believe the prospects for summer work are encouraging.

Architects Baker & Vogel, Pacific Block, Seattle, will prepare plans for a new home for the First M. E. Church of Bremerton, to cost $80,000.

Architects Stephen, Stephen & Brust, New York Block, will make plans for a $75,000 unit to the Edmonds High School. The structure will contain a large gymnasium, swimming pools, and the heating plant will be extended to serve the new building.

H. M. Smith, 1519 Madison Street, Seattle, plans the construction of a $50,000 apartment house. Eighteen apartments with private baths will feature this project.

Architect A. H. Albertson, Henry Building is to prepare plans for a new structure to house the three departments of the Cornish School of Music—dancing, music and dramatic art. The structure will cost approximately $125,000. The school also plans the construction of a $75,000 theater.

Architects Baker & Vogel, Pacific Block, Seattle, have been commissioned to prepare plans for a $200,000 Y. M. C. A. building to be erected in Everett. A basement and sub-base-

ment will contain gymnasium, steam bathrooms, boiler rooms, showers, swimming pool, and heating plant.

Architects Beezer & Bros., Seattle, are to prepare plans for three new hospitals, one at Pasco to cost $95,000; one at Lewiston, to cost $130,000, and another at Wenatchee to cost $125,000.

Other Cities in the State.

The Scandia Hospital Association, Spokane, plans the construction of a new and modern structure in that city, to cost $400,000, with facilities for 250 beds.

Building activities in Tacoma touched a new mark during March, with a total of $1,198,282. A number of new apartment houses were included in the permits issued, and more than a score of new residences.

Architect Marshall A. Dean, Wenatchee, is completing plans for rebuilding and enlarging the Manson school house at an estimated cost of $12,000.

Architects Vernon & Vernon, Aberdeen, have completed plans and will receive bids shortly for a school building to be erected at Centralia at a cost of $55,000. Plans for a tuberculosis hospital at Elma will also be prepared by them.

Idaho

Boise and Vicinity.

Peter Bethune, Boise, will erect a three-story brick addition to the North Side Inn, at a cost of $100,000. The two upper stories will contain forty hotel rooms, each one equipped with bath.

The Congregational Church of Pocatello plans the construction of a new $40,000 addition to its structure.

The St. Teresa's Academy, Boise, plans the erection of an $80,000 addition. The new building will be two stories, with a basement, and will contain twenty rooms and a dormitory.

Oregon

Portland and Vicinity.

Jensen & VonHerberg, operators of five motion picture houses in Portland, plan the construction in that city of an $850,000 picture theater with seating capacity of 3,000.

Architects Tourtellote & Hummel, Portland, are to prepare plans for a new $35,000 Knights of Pythias Building at Enterprise.

C. W. Frazier, contractor of Portland, has received the contract for construction of the Roseburg Tuberculosis Hospital. The structure will cost $200,000, and will include a main building, three stories high, providing 100 rooms. In addition, there will be an administration building and natatorium.

Peter Brach, Astoria, recently received the contract for the installation of plumbing and heating in the Sherman Lovell Building, now under construction.

J. H. Hansen, Astoria, will install the plumbing and heating in the Rohart & Cook Building that is being erected in Astoria.

The city of Hood River will hold a special election in May to vote on a bond issue of $45,000 for the construction of a combined city hall and fire station, and a large comfort station.

California

San Francisco.

The California State Board of Health, in session at Sacramento last week, decided to abolish the plumbing boards in the state authorized by the 1917 legislature, the result of which means that 120 members, together with the state plumbing inspector, Milton W. Lyon, no longer are on the payroll. The action was taken because of the recent court decision, in which it was held that the plumbing boards were working under an act that was unconstitutional.

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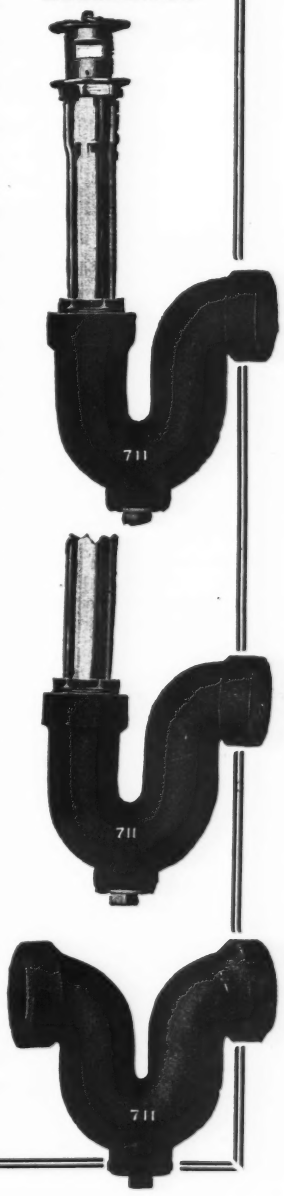
Always Reliable

Always reliable because we have built them right in the first place. There is that natural percentage of defective material that is bound to get out in many instances of trap building but you can rest assured that no trap leaves the Essex Foundry that hasn't been proved 99.9% perfect.

Write for our latest booklet on the "711"—it is handy for trap information.



ESSEX FOUNDRY

Murray St. and Avenue-D

Newark, New Jersey

CAST IRON EXTENSION SERVICE BOX

NO BOLT

NO Bolt Cast Iron Extension Service Boxes have been adopted by many of the leading cities of America because it saves thousands of dollars where the ordinary service box installation will waste them. There is no loss of covers in the No Bolt installation. Brass screws are not used in the No Bolt. The covers cannot become loosened and thereby allow seepage and dirt to enter the shaft. No Bolt Boxes can be set in flush with cement sidewalks and easy access to the box is instantly had by simply tapping the cover with a hammer.

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Factories: Linfield, Pa., and East Greenville, Pa.
Headquarters for all kinds of Plumbing Specialties
Patented Ideal Closet Connections, Soil Pipe and Fittings, Etc., Etc.

There are several more advantages that we would like to explain — Pamphlet "D-15" will tell the complete story. Write us.

The Board of Public Works of San Francisco has asked the supervisors for authorization to call for bids for improvements on the Grant School, on Pacific Avenue, between Broderick and Baker Streets, the estimated cost of the work being as follows: Plumbing, $14,000; heating, $10,800; ventilating, $7,600.

Munster & Bornholdt have been awarded the contract for a two-story building at Folsom and Twenty-sixth Streets, including plumbing and electric work, for $13,226.

A. Gough will install the plumbing in the Pig & Whistle Candy Co.'s factory at 33 Powell Street.

Architect August Headman is taking segregated bids for a one-story, with mezzanine floor, re-enforced concrete auto sales building for Mary A. Ruggles. The building will be erected on the west line of Van Ness Avenue north of Eddy Street and will cover a ground area of 40 by 109 ft. The same architect is preparing working drawings for a three-story reinforced concrete addition to the Spring Valley School at Jackson and Hyde Streets. This addition will cost about $100,000.

Figures for six one-story dwellings to be erected at Hayward Park, San Mateo, for Baldwin & Howell, will soon be taken by Architect H. C. Baumann of this city.

The Public Works Department at Mare Island is preparing plans for a two-story addition to a frame building for Marine Quarters. Bids will be called on completion of the plans.

Figures are being taken on a $40,000 apartment house to be erected in California Street, near Gough, for the California Investment Co.

Other Cities in the State.

H. Welters, Orland, will construct a new concrete swimming pool here in the near future. The pool will be about 80 by 120 ft. and will drain into an irrigation ditch.

To relieve the housing shortage in Roseville, a committee has been appointed to outline a plan for the erection of one hundred new houses.

Plans have been completed for a four-story apartment house to be erected on N Street, facing Capitol Park, in Sacramento, at a cost of about $125,000.

Segregated bids are being taken for a $40,000 three-story fraternity house to be erected at Piedmont Avenue and Channing Way, Berkeley, for the Alpha Delta Phi.

Fifteen new buildings are being planned for St. Mary's College. The new building's site comprises over 80 acres of the 235-acre tract near the San Leandro-Oakland city limits.

Trustees of the Lassen County High School, Susanville, have awarded the plumbing and heating contract on that building to J. E. O'Mara, of San Francisco, at $6,100.

Georgia

Atlanta.

Fred Cantrell, Inc., has secured several good contracts recently, among them the installation of plumbing and sewer systems in the new cotton mill at Cedartown, the plumbing in the new hotel and the plumbing in forty new dwellings, and the plumbing in the District Stores Building now being erected on Whitehall Street.

The Yarbrough Plumbing Co. has moved its offices from 10 Equitable Place to 14 East Hunter Street.

The Baxter Plumbing Co. will install the plumbing and heating systems in the Film Exchange Building being erected on Walton Street and also in a 75-apartment building and in a few cottages.

Tennessee

Johnson City.

A. H. Abernethy, Johnson City, will install the plumbing in the country club being erected in that city, and the plumbing and heating and roofing in three new residences.

H. P. Blount & Co., Johnson City, is installing the plumb-

ing and heating in the Woolworth Building which is being erected in that city.

Heathers Plumbing & Heating Co., Johnson City, have recently completed the plumbing and heating systems in the hospital that was erected at Alta Pass, N. C., and has secured the two contracts on the new addition.

Other Cities in the State.

F. Hayes, Bristol, has completed the plumbing and heating in the F. Bayne apartment house in Pulaski and has secured the contract for the plumbing and heating in the R. M. Richardson residence in Marion. Mr. Hayes will also install plumbing and heating systems in the G. Pennington residence, Bristol; Sullivan City, Tenn., Court House; heating in the Dr. Hicks store building, Bristol, and the Copenhaver Garage, Bristol.

NEWS FROM WEST VIRGINIA.

W. A. Bodell, of Bluefield, will install the plumbing and heating in the Junior and Senior High School at Roanoke Rapids, N. C., a $40,000 job; in West End School at Bluefield, W. Va., and the plumbing in a theater and office building in Williamson, W. Va.

Bluefield Plumbing & Heating Co., of Bluefield, has completed the plumbing and heating in the H. Meyers' residence, and also the plumbing in nine houses for Dr. Scott, all of South Bluefield, and the plumbing in G. M. Mullins' residence at Clinton, Va.

VIRGINIA.

Lynchburg.

F. A. Watson, Lynchburg, has recently completed a $20,000 heating installation job in the Jobbers Overall Co.'s building and has secured the contract to install the heating in several school buildings and residences.

The Cleland Co., Lynchburg, has secured the contract to install the plumbing in 1,005 residences which are to be erected by the Du Pont Engineering Co., at Flint, Mich. It is said that the soil pipe alone, on this job, when laid out end to end, will cover a distance of over 19 miles.

Moseley Bros., 1741 Filmore Street, Lynchburg, will install the plumbing in the Brookneal Hotel and in three residences in that city. The hotel contract amounts to $4,000.

Roanoke.

Forbes Weddle Co., 25 Kirk Avenue, Roanoke, has completed the $14,000 plumbing system in the Leas & McVity Co.'s building, in Salem, and has the contracts to install the plumbing in the Payne Building, the Park Street School and the plumbing and heating in twenty-two other buildings in the city.

Engleby Bros. & Co., 15 Church Street, Roanoke, has the contracts to install the plumbing and heating in the Piedmont Label Co.'s factory at Bedford, in the MacBain Industrial Plant and in the Gibson Packett Co.'s building. The plumbing systems in the National Grocery Co.'s building on Salem Avenue and the Farmers Mercantile Co.'s building will also be installed by this firm.

Howell & Co., Roanoke, are to install the plumbing in the girls' dormitory of the Visco Silk Mills, and the heating and plumbing in the Shenandoah Hospital, which will contain 40 rooms.

Other Cities in the State.

F. A. Dunn, Lexington, has secured the contract to install the plumbing and heating in the residence of Curtis Walton in Natural Bridge and in the dormitory of Washington & Lee University. He has recently completed the installation of the plumbing, heating and ventilating systems in the Virginia Military Institute.

C. R. Dudley & Topping, Clifton Forge, have completed the plumbing systems in four houses that were erected for the Dixie Lumber Co. and have secured the contract for three residences for W. F. Andrews.

William Desmond, Alexandria, will install the plumbing in 27 residences, 6 in West Rosemont, 13 for S. A. Downey and 8 at Camp Humphrey.

Sisson & Elser, 105 South Pitt Street, Alexandria, have the plumbing and heating contracts on 40 residences at Aurora Hill and the plumbing in 23 residences that are to be erected for L. M. Johnson.

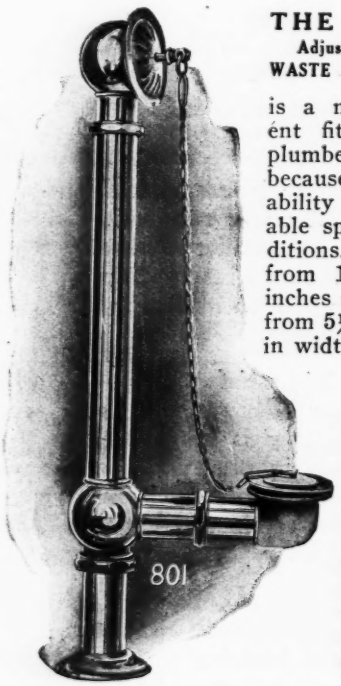
Augusta Plumbing & Heating Co., Staunton, has secured the contract for remodeling the plumbing and heating in the residence of Col. Kabel.

WHITAKER
Start with a good boiler—
The way to insure a trouble-proof hot water supply is to install a good boiler and heater —that means a reserve supply of hot water to meet varying requirements.
For certain satisfaction put in Whitaker Steel range boilers; their history is known, they are made in our own shops, sheets from our own mills, and work is inspected at various stages.
Whitaker Steel boilers are galvanized by dipping after manufacture, insuring a perfect unbroken spelter coat with no metal exposed to rust. All sizes, riveted or welded.
WHITAKER-GLESSNER CO.
Range Boiler Dept PORTSMOUTH, O.

FROST QUALITY

BRASS GOODS FOR PLUMBERS

A standard line of high grade brass supplies, including everything the plumber requires in Traps, Waste and Overflows, Tank and Seat Trimmings, Lavatory and Tank Supply Pipes and Fittings, Sanitary Vent Fittings, etc.



THE "FEMCO"
Adjustable Connected
WASTE AND OVERFLOW

is a most convenient fitting for the plumber to install because of its adaptability to suit available space and conditions. Adjustable from 12½ to 14¾ inches in height and from 5½ to 7 inches in width.

"FEMCO" Products are accurately made of highest grade brass in neat, pleasing designs. Finest nickel-plated, durable finish.

You make no mistake when you specify and install "FEMCO" BRASS GOODS.

Order from your jobber

Frost Manufacturing Company

Kenosha, Wisconsin

Canada

THE PROVINCE OF ONTARIO.

Toronto.

W. J. Mason, 323 Parliament Street, is completing the installation of plumbing and heating systems in the residence of Dr. M. Lyon, and has secured the contract to install the heating in the residence of Dr. Nichols.

Kelly & Cracknell, 1729 Bloor Street, West, are to install the plumbing in the "Old Mill Tea Room," and in seven stores that are to be erected on Roncesvallis Avenue.

Rodwell Bros., proprietors of the Eclipse Plumbing & Heating Co., 713 Danforth Avenue, have recently opened a branch establishment at 141½ Simcoe Street.

Edgar Lee, who returned last fall after four years of overseas service, is now conducting the plumbing establishment at 1661 Dundas Street, West, which was formerly owned by W. R. H. Daniels.

G. F. Mason, 467 College Street, has secured the contract to install the plumbing in the $25,000 residence that is to be erected in this city for Mr. O'Reilly.

Byrne Bros., 253 Brock Avenue, will install the plumbing in the 12-apartment building, and in eight one-family houses that are to be built in this city. They have recently completed the plumbing and heating installations in the St. Francis Club and in the St. Helen Church.

R. T. Hearn, formerly of Hearn & Lillie, is now established in the plumbing and heating business at 1369 Queen Street, West, under the name of R. T. Hearn & Co. The contract to install the plumbing and heating in twelve houses in North Toronto has been secured by his firm.

Warden King, Ltd., Toronto branch, has been awarded the contract to install the heating in the Presto Lite factory and in several other buildings in the city.

Shearer & Russell is the style of a new plumbing firm at 3184 Dundas Street, West, which has secured several good contracts. Both partners saw four years' service overseas.

Ottawa.

A unique advertising plan has been adopted by the W. G. Edge Co., Ltd., a plumbing and heating firm, to mark the opening of their new store and offices. This takes the form of a campaign to induce women to visit the "Ladies' Department," where a large number of articles of kitchenware in aluminum, agate and tin are displayed.

The first sod has been turned for the erection of a new three-story club house for Bayswater Council, Knights of Columbus, which will cost in the neighborhood of $100,000. The plumbing contract will include the installation of shower baths, swimming pool, and gymnasium.

A considerably darker aspect to the negotiations between the building trades and the local contractors is proving a menace to building operations and in turn to the plumbing and heating trade. Hopes are still held out for the avoidance of a May Day strike, though the outlook has practically become a deadlock.

The plumbing and heating trades continue dull, activity being mostly in repairs and replacements. Very little new work is under way, though building operations on several large public buildings are planned to be begun soon.

Hamilton.

The building permits issued from the building inspector's office for the month of February totaled forty-two, aggregating in value $218,775, this being an increase of $30,000 over the corresponding month of last year. A pleasing feature is that eight of these permits are for new factories or additions to existing plants, costing $161,000.

Much regret is expressed over the death of Ernie Covell, a well known member of the Society of Domestic Sanitary and Heating Engineers, in the Toronto Hospital. His wife and family have the sympathy of all the members of the local plumbing and heating trade.

The plumbing trade was never better than it is at present in this city. The wage agreement between the masters and men terminates on the first day of this month, but at present everything points to a new agreement being arranged amicably.

The sons of the late Adam Clark have formed a limited company to carry on and extend the business of plumbing and heating so long and successfully carried on by their father in the city. This firm has recently secured the following contracts: plumbing and heating in the Allenby school, the warehouse for the Wood, Alexander & James Co., King William Street, and the new Postal B Station, Barton Street East.

Brantford and Vicinity.

Anguish & Whitfield have recently completed the installation of plumbing and heating in the Major Ballachey School and have secured the contract to install the sprinkler system in the Kitchen Overall & Shirt Factory.

W. H. Armour has secured the contract to install the plumbing in the Maple Leaf Dairy on St. George Street.

R. H. Ballantyne will install the plumbing systems in ten houses that are to be erected by the Housing Commission.

Harry Gunn has completed the plumbing system in a new residence for W. H. Turnbull on Strathcona Avenue, and has also completed a remodeling job for Mrs. H. R. Yates, on Sydenham Street.

Richard Hope will install the plumbing in the residence that is to be erected on Mohawk Street for Mr. Rodgers.

Thomas J. Minnes & Co. are at present engaged with the installation of plumbing in the woolen factory which is now under construction for the Slingby Woolen Co.

A. Taylor recently completed the installation of the plumbing system in the four residences that were erected for A. Lamb on Mary Street.

Harod Witton has been awarded the plumbing contract on the home of H. Kitchens which is to be erected at 20 Edwin Street.

The acute shortage of houses in the city of Brantford is clearly shown by the answers that were received to an advertisement, in one of the local papers, calling attention to the vacancy of a flat. The ad, having appeared in an evening edition, brought out 150 home seekers that same evening. A similar situation is apparently prevalent throughout the province of Ontario.

GLOVES OFTEN WITHSTAND TREMENDOUS ELECTRICAL VOLTAGES.

Some day when you are walking along a "main-travelled" road, where traffic is piled back as far as one can see and linemen are repairing a broken wire, stop and watch them work. They are interesting artisans, the most interesting phase of their operations, you will not see. The gloves they wear tell a unique story. Probably the line they are handling is 'alive,' and carrying electric current enough to cause instant death, yet they pick it up, twist it, splice it as nonchalantly as though handling fishing tackle. They are able to pick up the live wire because of the rubber gloves they wear. Did you know that these gloves are today made according to rigid specifications completely standardized and that no purchasing agent dare buy rubber gloves until he has thoroughly tested them. No glove can be marked with the manufacturers's name or with the size in such a manner as to injure it any way. Every glove must be more than 14 inches long and the average thickness not less than 60 mils. They must have a tensile strength of 1,200 pounds per square inch and bear having two inches of their surface stretched to twelve without a rupture. The gloves shall be capable of withstanding the application of 18,000 volts without puncturing. The dielectric test is made by immersing the glove in a pan of water with the glove nearly full of water. The water inside and outside of the glove forms the electrodes. These are conveniently connected to the testing transformer by means of a chain suspended within the glove and by direct connection to the retaining vessel.

After the gloves are purchased, rigid inspection is insisted upon; they are subjected to periodic high voltage tests weekly or monthly, cleaned with soap and water and stored in cold, dark places. They are marked by serial numbers and their history kept.

You understand that should one of the linemen you have been watching, puncture his gloves, death may result. The perfection of linemens rubber gloves is one of the silent romances of the electrical industry. They are as important in the day's work as the steel helmet in battle. Today linework is a hundred times safer than formerally for now when a line is deadened the switch is usually of the modern safety enclosed type and no other person but the man on the line holds the key that locks the disconnected switch.

SIMCO
STEEL WATER HEATER

Coal, Gas or Oil Fired

A double-shell water heater, having two-inch water space between the shells. Electrically welded. Brass plugs, registering with the ends of each tube, are located in the outer shell, giving ready access to tubes for cleaning and repairs. Any tube can be replaced without disturbing another. Handholes are provided for clean out purposes.

Made up complete ready for installation. Tested at 175 lbs. pressure for 100 lbs. working pressure.

The SIMCO Heater occupies less floor space than a cast iron construction for equal service. It is adaptable for a number of uses.

Write for literature

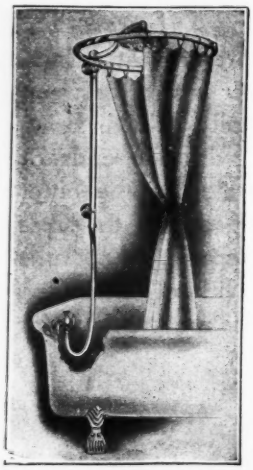
The Sims Company

ERIE, PA.

"We keep others in hot water"

SANIBRASS

Portable Showers



A Big Seller

With Every

Master Plumber

Ask Your

Jobber

SANIBRASS CORPORATION

17-27 LIBERTY STREET BROOKLYN, N. Y.

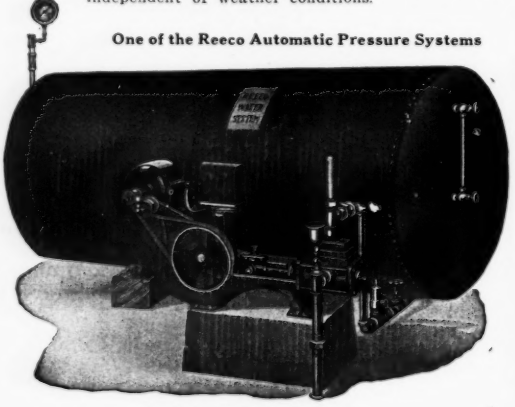
APRIL SHOWERS BRING MAY FLOWERS

And then leave them to wither and dry up in the droughts of Summer. Advise your customers to install

REECO WATER SUPPLY OUTFITS

for sprinkling lawns and gardens and to provide an ample supply of water for other domestic purposes, and so be independent of weather conditions.

One of the Reeco Automatic Pressure Systems



Send for Bulletin B-1 on

REECO Electric, Gasoline and Kerosene Pumpers. Rider and Ericsson Hot Air Engines. Complete Pneumatic Tank Systems.

RIDER-ERICSSON ENGINE CO., Walden, N. Y.

DISTRICT OFFICES:

20 Murray St., New York
Fidelity Mutual Bldg., Wilson, N. C.
116 S. 8th St., Minneapolis
9th and Cary Sts., Richmond, Va.
40 N. 7th St., Philadelphia
203 N. Liberty St., Baltimore
1536 Franklin St., Tampa, Fla.
564 West Randolph St., Chicago

Convention Dates

April 27, 28 and 29, 1920.—The annual meeting of the Chamber of Commerce of the United States, at Atlantic City, N. J.

May 3 and 4, 1920.—The annual convention of the Georgia Master Plumbers' Association, in Atlanta, Ga.

May 5 and 6, 1920.—The annual convention of the Oklahoma Master Plumbers' Association, at Muskogee, Okla.

May 10 and 11, 1920.—The eleventh annual convention of the National Pipe and Supplies Association, in Chicago, with headquarters at the Congress Hotel and Annex.

May 10, 11 and 12, 1920.—The annual convention of the Associated Master Plumbers of Texas, at Ft. Worth.

May 12, 1920.—The annual convention of the Master Plumbers' Association of Connecticut, at Waterbury, Conn., with headquarters at the Hotel Elton.

May 14 and 15, 1920.—The annual convention of the Oregon State Association of Master Plumbers, at Salem, Ore. The sessions will be held in the Commercial Club.

May 17 and 18, 1920.—The annual convention of the Alabama Master Plumbers' Association, at Selma, Ala.

May 18 and 19, 1920.—The annual convention of the Pennsylvania State Association of Master Plumbers, at Harrisburg, Pa., with headquarters at the Penn-Harris Hotel.

May 18, 19 and 20, 1920.—The twenty-third annual convention of the Colorado Master Plumbers' Association, in Denver, Colo.

May 21 and 22, 1920.—The annual convention of the Washington Master Plumbers' Association, at Bellingham, Wash.

May 24, 25, 26 and 27.—Thirty-first annual convention of the Heating and Piping Contractors' National Association at Cleveland, Ohio, with headquarters at Hotel Cleveland.

May 24, 25 and 26, 1920.—The annual convention of the California State Association of Master Plumbers, at Oakland, Calif.

May 25, 26 and 27, 1920.—The eleventh annual convention of the National District Heating Association, in Chicago, with headquarters at the La Salle Hotel.

May 26, 27 and 28, 1920.—The summer meeting of the American Society of Heating and Ventilating Engineers, at St. Louis, Mo.

June 8, 9 and 10, 1920.—The annual meeting of the Canadian Society of Domestic Sanitary and Heating Engineers, in Toronto, Ontario.

June 15, 16 and 17, 1920.—The thirty-eighth annual convention of the National Association of Master Plumbers, in Pittsburgh, Pa., with headquarters at the William Penn Hotel.

September 7, 8 and 9, 1920.—The annual meeting of the American Society of Sanitary Engineering, at St. Louis, Mo.

Jerome Alexander, in a paper read before the American Chemical Society at St. Louis, announced the discovery of a new fuel fluid, greater in heat value than either coal of the present fuel oils. He asserted that this fluid would prove valuable to navigation, permitting a wider cruising radius, and could be used for smoke screens. The new fuel utilizes coal waste and cheap tars, mixed by secret process.

No Life.

He took her rowing in the lake.
She vowed she'd go no more.
I asked her why—her answer came,
"He only hugged the shore."—Lehigh Burr.

LEGAL DECISIONS

Lien Held Valid Where Claim Contains Non-Lienable Items.

From Washington comes a case in which the contractor's surety defended an action against the contractor and itself because it was not shown that the materials furnished the contractor were used in the building, and that, in addition, there was included in the notice of claim for lien certain items that were not lienable.

It appears that the plaintiff, dealer in materials, furnished the contractor certain goods during his work on a building being erected. The contractor did not pay for the materials so sold to it, and the plaintiff served notice of claim for lien on the claim, attaching thereto an itemized list of the articles claimed to have been furnished the contractor. This notice showed a balance of $876.24. Before trial of the action the defendant was served with a written statement to the effect that certain of the items included in its notice of claim for lien were not properly chargeable against the bond of the surety, that they were included by error, and that the surety would not be held liable therefor. These items were listed and their total value was placed at $73.06. There was a judgment for the material man upon trial of the case and the surety appealed.

On the contention that the claim and lien of the material man was invalid the surety cited cases where the court had held liens to be void which so far intermingled lienable and non-lienable claims as to be incapable of separation, and in which the claimant had willfully inserted in the claim of lien both lienable and non-lienable items. But in reviewing this case the court found that the non-lienable items formed an inconsiderable part of the whole, were easily separable from the lienable items, and were not willfully inserted, but were inserted by inadvertence and mistake, as the written statement withdrawing certain items showed. The court further said the cases cited, as well as others from this court, recognize these distinctions and hold liens valid when filed in good faith, even though they may contain non-lienable items. Therefore the right to lien, disputed on this point, was upheld.

On contention that it was neither shown that the materials sold the contractor, upon which the claim was founded, were actually used in or about the building, nor delivered on the ground for use therein. Now the evidence as to the delivery of the materials was in substance the following: The material man's place of business was in Spokane, some distance from the place where the buildings were being erected. The goods were ordered by the contractor in varying quantities and at different times during the progress of the work. As the orders were received the materials were delivered to a common carrier—sometimes a railroad company and sometimes an express company—for transportation to the shipping station nearest the site of the building, some 2½ miles therefrom, from which place they were receipted for to the carrier by the contractor or some one on its behalf. The actual receivers of the goods were usually draymen or their employes, and the seller was unable to show that more than a small quantity of them actually reached the building. The question, therefore, said the Supreme Court, is whether this is such a delivery as will charge the bondsman of the contractor.

This bond was one insuring the contractor on a public work and therefore the bond is regulated by statute. This statute provides that it shall be conditioned for the faithful performance of the work by the contractor and for the payment by him of "all laborers, mechanics and sub-contractors and material men," and all persons who shall supply the contractor "with

One of the 105 Styles of American Cast N. P. Lavatory Traps

The artistic design and smooth finish of AMERICAN Traps will appeal instantly to your customers.

Fig. 301

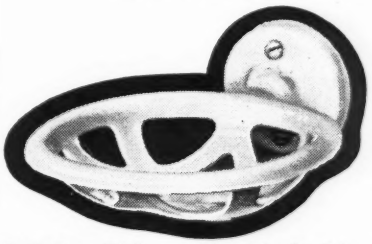
Made perfectly smooth inside and out—deep water seal, full sized waterway.

You can depend upon the AMERICAN Line.

Write for catalog.

AMERICAN SANITARY MANUFACTURING CO.
Abingdon, Illinois
Manufacturers of Fine N. P. Brass Specialties

SNO-WITE



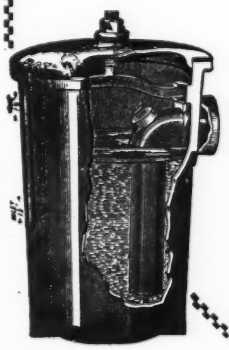
C-87 Soap Dish Size 4 in. by 5 in.

The cut shown here represents one of our beautiful special design bath room fittings — porcelain enamel on cast iron. An everlasting finish.

Write for catalog and discounts.

American Enameled Products Co.
2118-2128 Prairie Avenue - - CHICAGO

The Boston
Round Grease Trap



is an ideal trap for use under kitchen sinks and in small restaurants.

The BOSTON Trap prevents clogged pipes by separating the grease from waste water and retaining it. Removing grease from Trap is a simple matter. The extra large handhole is a distinctive feature of the BOSTON Trap.

Write for prices.

R. Estabrook's Sons
1st and C Sts., South Boston, Mass.

The Hessler
Adjustable
Plumbers' Roof Flange

It is the best one. Write for prices, to nearest jobber or to

H. E. HESSLER CO.
Syracuse, N. Y.

Former manufacturer of the McGuire

WATROUS
SANITARY PLUMBING FIXTURES
PATENTED DUOJET

A line representing the most advanced ideas in Sanitation, Economy of Operation and Ease of Installations.

Duojet Closets—Flushing Valves—Urinals—Drinking Fountains—Self-Closing Cocks—Liquid Soap Fixtures, Etc.

Manufactured and Sold Exclusively by

The Imperial Brass Manufacturing Co
510 South Racine Avenue, Chicago, Ill.

ASK FOR CATALOG

Insurance
Against Flooded Basements

Where the Signet Drain is installed there can be no back water.
A perfectly reliable trap that automatically keeps out sewerage, gas and germs.

TRADE MARK SIGNET REG. U.S. PAT. OFF.

Pat. Dec. 8, 1914

Write for details

Always works. Nothing to get out of order. Brass working parts submerged.

The Signet is clean, sanitary, simple, durable and efficient.

CRAMPTON-FARLEY BRASS CO.
KANSAS CITY, MO.

Dependable Showers
Easily set for desired temperature
The Milwaukee Mixer
precludes all danger of scalding.
Made in a variety of designs.
Valve either exposed or concealed.
China or metal handle.
Order from your jobber.

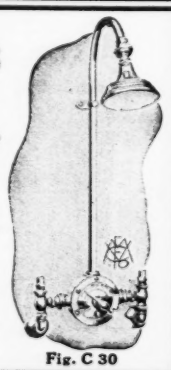


Fig. C 30

The Milwaukee Flush Valve Co.
Valve Specialists MILWAUKEE, WIS.

One of
THE "REASONS WHY"
You should handle
DETROIT WATER HEATERS
ECONOMY OF OPERATION

The much greater surfaces of metal, backed by a film of water, exposed to the burning gases, in our heater means that the desired result can be obtained by the burning of 25 to 35 percent less gas.

Detroit Heater Corporation
715-17-19 Grand River Ave. - Detroit, Mich.

provisions and supplies for the carrying on of such work," and it is further provided that all furnishing such labor or materials may bring an action on the bond in their own name.

The court pointed out that the statute did not make use of the materials in the building a necesary prerequisite to a right of recovery on the bond for materials furnished, nor did it make delivery on the ground such a necessary prerequisite. However, in a similar case the Supreme Court had held that one or the other of such conditions must be shown before a recovery could be had.

In the instant case, the court said the bondsman manifestly did not become surety for all the materials the contractor might purchase during the time he is actually at work upon the contract, regardless of the use made of the materials. But since he may not be able to show that the materials furnished actually went into the structure, he is allowed the more liberal rule of showing that he delivered the material on the ground for use therein. This rule, the court said, is sufficient for the protection of bona fide material men, while a more liberal rule might lead to the grossest of frauds.

The principle as announced was held to bar a recovery by the material man, save for such material as was actually delivered at the building. Since it was not evident what part was actually delivered at the building the judgment in favor of the material man was reversed and the cause remanded with instructions to ascertain what proportion of the materials were actually used in the building or were actually delivered on the ground for that purpose.

FREE INFORMATION ON ACCEPTANCES.

The desire of business men generally—even those engaged in activities to which the system might not be applicable—to familiarize themselves with the meaning and use of trade acceptances, is most marked, according to the American Acceptance Council, 111 Broadway, New York, which reports that the inquiries upon it for information have doubled in the last few months. These include, as heretofore, an increasing number of requests for copies of the 54-page booklet entitled "Trade Acceptances," by Robert H. Treman, formerly deputy governor of the Federal Reserve Bank of New York. This is the standard work on the subject, and has attained wide circulation and publicity. The council states that as long as the supply of the present edition lasts it will be glad to fill, without charge, in the order of their receipt, requests for single copies from plumbing and heating contractors. If copies are desired in quantity by business houses or trade associations for educational distribution, these will be supplied at actual printing cost.

Bergenfield, N. J.—George Krieger has opened a plumbing establishment at 87 Elm Avenue.

Flint, Mich.—Henderson & Nedel is the style of a new firm which has opened an office at 116 Patterson Building. The new firm will specialize in heating and ventilation.

Wausau, Wis.—The Central Plumbing & Heating Co. has succeeded to the business of the Molter Plumbing & Heating Co., having purchased the interest of N. P. Molter. The officers of the new company are A. R. Marson, George C. Beilke and Walter A. Baumgardt.

Johnstown, Pa.—Stanton-Barnhart Plumbing & Heating Co. is the name of a new firm which has bought the Albert Bailey interest in the Johnstown Engineering Co. The new firm will establish headquarters in the Rose Building. Curtis C. Stanton and Curtis Barnhart are the new owners.

The Finance Department has announced that negotiations for a loan of $50,000,000 for the Polish government in the United States have been completed. The loan will be handled by the People's Industrial Corporation, New York.

IS YOUR BOOKKEEPING SYSTEM ELASTIC ENOUGH TO HANDLE EXPANDING BUSINESS?

(Continued from Page 149.)

firm having the job done with the address in the line below. Next comes a notation regarding the nature of the job, as, for instance, "Put in new closet bend." From these entries are made up consecutively numbered bill head job tickets. As these tickets are turned over to the plumbers, the numbers of the tickets and the names of the plumbers to which they were given are entered on the jobbing book. When a plumber returns after having completed a job, he enters on the jobbing ticket the exact nature of the work, the materials used, and the time required to do it. Where there is any likelihood of the customer's questioning the bill, the

TIME SHEET

JOB Globe Varnish Co.

WEEK ENDING April 17th 1920

LOCATION 100 W. Monroe St.

	HOURS
Plumbing	46
Gasfitting	27
Sewerage	30

Weekly Time Sheet.

tickets may be made out on the job and the customer asked to sign it.

The cash book and ledger are of the regular double entry type and require no description.

Advantages of the System.

The Weber system, as a whole, has several advantages. In the first place, the company know exactly what each job is costing at any time, which permits them to bid intelligently on similar jobs. In the second place, any information regarding any contract, present or past, is immediately accessible in a compact form. In the third place, on contracts that run for a long period of time, requests for advances can be based on accurate knowledge regarding the investment in the job at any given time. Furthermore, bills for time and material jobs may be rendered very accurately. In fact, the Jacob G. Weber Co. has done work on the time and material basis for a number of years for several large firms that keep a checker on the job themselves, and never have they returned a Weber bill for corrections. Then, too, the Weber system is sufficiently elastic so that no matter how rapid may be the growth of the business, it will not outgrow the system of accounting.

Salt Lake City, Utah.—Henry Green, on a bid of $91,100, secured the contract to install heating and ventilating systems in the county infirmary building now under construction at Twenty-first South and State Street.

St. Louis, Mo.—T. J. Sheehan Plumbing Co., 1428 Olive Street, has been awarded the contract to install plumbing in the $500,000 factory building which is to be erected at Union and Brown Streets, in this city.

St. Joseph, Mo.—The Turner & Cook Plumbing & Heating Co., 207 South Seventh Street, has been awarded the plumbing and heating contracts on the $10,000 residence which is to be erectd at Nineteenth and Jones Streets.

RAYMOND LEAD WORKS

735 So. Washtenaw Ave.

CHICAGO

Largest manufacturers in the UNITED STATES of LEAD MATERIAL for PLUMBERS' USE

We Solicit Your Orders

WOLVERINE RUBBER GOODS ARE UNIFORM, DEPENDABLE AND FULLY GUARANTEED

They are made right and sold right.

Send for sample of this No. 4403 Tapered Bibb Washer. Note the rounded taper always fits.

Flexible, non-disintegrating.

WOLVERINE BRASS WORKS

Grand Rapids, Mich.

Wolverine Co., Inc. New York, N. Y.

Wolverine Brass Works, Inc. San Francisco, Calif.

FOR lasting quality and true capacity use *"KOVEN"* Pure Iron, Double Row Riveted, Galvanized Range Boilers, or *NACO* Galvanized Range Boilers made of open hearth steel. These boilers may be bought of jobbers everywhere.

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WILHELMI and MODERN Copper Range Boilers

Unexcelled in design, material and workmanship.

Interior thoroughly tinned.

No iron used in construction.

Guaranteed against collapse.

Always satisfactory. You can safely install them on your best jobs.

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Hayes Manufacturing Co.

Paterson, N. J.

K. K. Cleans Closet Bowls

The Sanitary Way

A powdered chemical compound scientifically prepared for cleaning formation of uric acid and other stains from closet bowls and traps and urinals that are made from porcelain only.

No fumes, odor or dirt.

You can supply your trade with K. K. and make a good profit.

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Pittsburgh, Pa.

Canadian Distributors:
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No Branch Offices in the United States

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Send for It Quick!

We have never issued anything nearly as valuable to you as this NEW CATALOG OF PAUL SYSTEMS OF WATER SUPPLY.

And it's for YOU. All you have to do is to ask for it and we'll be more than glad to send it to you post-haste. Full of illustrations and selling information, covering everything you want to know about these popular water systems.

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1718 N. Harrison St.
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HEAVY COVERING ASSURES LIFE-LONG SERVICE — ACID-PROOF — IMPERVIOUS—STANDS ABUSE LIKE A BOWLING BALL — CONCEALED HINGES — INDISPUTABLE QUALITY

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It's Started!

What? THE PARROTT BOOM! Knew it would come. Merit still counts! Home owners demand automatic, instantaneous hot water. The New Parrott not only supplies the demand, but costs less to buy, and to operate—and for upkeep. It's the coming Heater, Mr. Plumber—and you make more money selling it, in the bargain. Write us for "The Story of the Parrott"—and Plumbers Selling Proposition.

PARROTT HEATER COMPANY
224 21st STREET DETROIT, MICHIGAN

ONTARIO SOCIETY OF DOMESTIC SANITARY AND HEATING ENGINEERS IN ANNUAL CONVENTION.

(Continued from Page 155.)

don, Canada, which was passed last November and which later was ordered suspended and a committee appointed to revise the same measures. This was deemed unreasonable, as it placed the plumbing inspector at work without proper authority, and was unwarranted.

Citing the interferences to proper management that have come to light, and declaring that "any legislation which prevents or hinders the national government from exercising its due prerogative in the matter is faulty and should be amended. Mr. Wright said that "while people today know that disease may be prevented and death averted, yet most of us at heart firmly believe that we are in the hands of a merciful Providence who overrules all for our good.

"It is, therefore, through the saving power of hygiene and the plumbing regulations in which we hope for improvement, in the present generation, by bettering our inherited endowments—the existing conditions are far from ideal, and they might be easily and speedily righted if we worked along proper lines."

Mr. Wright summarized the usefulness of proper legislation to bring about the successful conclusion of all predetermined obligations and declared that the health of the community rests with the efficient work rendered by the domestic sanitary and heating engineer with the proper governmental backing. And he said that the government should "devote more attention" to all matters having for their object the betterment of the health of the people.

"We leave too much to Providence and forget that God helps those who help themselves, and we have yet to realize as domestic sanitary and heating engineers that we must individually know more and practice more of public health principles."

Kenneth B. Allison, of the Educational Committee, told of the work of his committee and how he had issued a little booklet with articles showing the right and wrong way of estimating and figuring overhead expense. The men with just a kit of tools, he said, were making unfair competition and that is the thing that should be gotten away from. The central office idea was also discussed. This office, he said, would work out bookkeeping systems, advertising campaigns, window trimming ideas, have speakers and lecturers to improve the trade and also develop forms and live wire letters for those wishing to better themselves.

The Resolution Committee's Report.

The Resolution Committee submitted the following report, which was acted upon, as indicated:

We would recommend that special effort be given by the incoming directors to organize the City of Hamilton, and to assist Kitchener in further organization.—Adopted.

We would also recommend that the members of this convention be advised that after the 1st of July, 1920, the law of the Province of Ontario demand that all firms keep a complete set of books.—Adopted.

We would recommend Clause 7, Page 5, of President's Report, dealing with the question of dividing the province into districts, to be discussed in convention.—Adopted.

We would recommend that Clause 5, of the Secretary's Report regarding three-year term for directors, be discussed and acted upon in open convention.—Not Adopted.

Your committee recommend that the paper and report of Mr. John Wright, Chairman of Sanitation, be read and discussed in convention. We desire to compliment Mr. Wright on his work and congratulate this society on having such an efficient Chairman of Sanitation.—Adopted.

We would recommend that the initiation fee be ten dollars, and the annual dues ten dollars, and the application forms be changed to comply with this recommendation, as set out in the Treasurer's Report.—Adopted.

Friday Afternoon Session.

An address on "Provincial Plumbing Regulations," by F. A. Dallyn, provincial sanitary engineer of Toronto, featured the Friday afternoon session. He told of the decrease in deaths from typhoid because of the new idea in sanitation.

Election of Officers.

At this session officers for the ensuing year were elected as follows:

President, Thomas J. Minnes, Brantford; vice-president, James H. Cunningham, Welland; treasurer, Thomas M. Maxwell, Toronto, and secretary, Garrett F. Frankland, Toronto.

Friday Evening Banquet.

The annual banquet was held Friday evening with 150 sanitary engineers and many manufacturers and jobbers present. A very enjoyable evening was spent by all who were in attendance. The following gentlemen were on the speakers' roster: F. R. Maxwell, Thomas Mahoney, George Baker, Fred Armstrong, William J. Woolley, T. J. Minnes and J. W. Bruce.

Saturday Morning Session.

A visit to the "Hart House," a new building at the university, to see and have explained the plumbing system, was part of the morning program. Following this several good showrooms were visited.

Saturday Afternoon.

William J. Woolley, secretary-manager of the National Trade Extension Bureau, was given the right of way Saturday afternoon, and delivered a most instructive address. He discussed at length the subject of management, having his charts and bookkeeping system handy to show in a practical form the best methods. Collecting, buying, selling and production were all touched on in the course of his talk, which was well received by those who heard him.

A vote of thanks was given Mr. Woolley at the suggestion of President Minnes, and a hearty three cheers from the audience voiced its appreciation. A most successful convention was thus brought to a happy ending.

Among the manufacturers and jobbers present at the conference on Thursday afternoon were the following: George Fisher, Canadian Brass Co.; Hugh Wallace, Standard Sanitary Mfg. Co.; Fred Armstrong, Port Hope Sanitary Mfg. Co.; Anges Groff, Galt Brass Mfg. Co.; H. S. Harwood, James Robertsen Co., Ltd.; Chester Stevens and C. L. Robb, Empire Brass Mfg. Co.; Mr. Rooks, Page-Hersey Co.; F. Welkes, Canada Pipe & Steel Co.; Frank McLaren, Galt Brass Co.; M. E. Ratz, Forwell Foundry Co.; M. J. Quinn, National Equipment Co.

OBITUARY.

A. C. Hickey.

A. C. Hickey, treasurer of the Chicago Master Plumbers' Association since last January, died at the Montrose Hospital, Chicago, on Saturday, April 17th, after suffering a relapse from an attack of pneumonia. Mr. Hickey was born in Toronto, Canada, in 1852, and in his early manhood worked in Buffalo, coming to Chicago in 1873, where he resided until his death. Mr. Hickey conducted a successful plumbing business at 564 West Randolph Street and was well known in the trade locally and throughout the country, having been a constant attendant at National conventions. Funeral services took place on Tuesday, April 20th, at St. Patrick's Church, Chicago, and interment in Mt. Carmel, the ceremony being attended by a delegation of forty members of the Chicago Master Plumbers' Association.

Simplify Your Heating Jobs

Whenever you install the "O-E" Perfect Heating System (Three in One) your customer not only gets more for his money, but the simplest, most flexible system made.

The "O-E" Perfect Air Exhauster and Vacuum Valve remains open as long as there is any air in the system, but port closes the minute any heat comes in contact with it. Always works. Cannot stick or buckle. Fool-proof.

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CRANE BRASS VALVES

"Castex"
WHITEST VITRIFIED CHINA
Products such as:
Closet Bowls
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Specialties
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Our High Pressure Glasses have fused ends and are annealed by special process. Try them for highest steam pressures.
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Ready for immediate delivery in the following sizes:

Horizontal Tanks—from 30 in. by 6 ft. to 42 in. by 14 ft.

Vertical Tanks—30 in. by 6 ft. and 36 in. by 6 ft.

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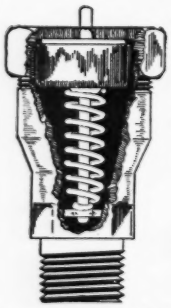
Hamburg, Berks Co., Pa.

We also manufacture Steam Boilers, Hot Water Boilers and Plate Steel Drums

The Donnelly Automatic Vacuum Valve



insures hot water boilers against collapse through syphonage.

Can be used on closed tanks, vats, etc., where a vacuum is likely to occur.

Set up ready to install when you get it.

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The
Overton
Plumbers' Adjustable Flashings

Hugs any pipe—water tight. Fits any angle. Self-adjusting. No turning or twisting necessary. Material—galvanized iron or copper. Your dealer has them in stock.

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For
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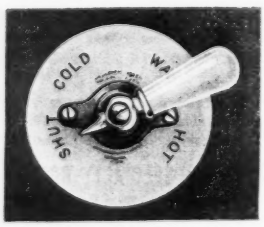


Write for Bulletin D-10-X

HOFFMANN & BILLINGS MFG. CO.
MILWAUKEE

THE COST OF INEFFICIENCY.

"Men in some of the western lumber camps are doing for $135 a month work that I used to do for $15 a month," says a prominent lumberman of Duluth, Minn., in a recent interview. "When I saw these men pitching quoits for a little exercise after their day's work, I said 'This isn't lumbering.' * * * The labor situation is not always going to be what it is today. Things are bound to settle back to normal. I believe there will be a big movement to America from nearly every country in Europe. Now in Duluth we have riveters in the ship yards earning $24 a day. Their wives have bought all the silks and diamonds in the city. In our western camps the men have their pockets full of money. The low efficiency and high cost of labor are the reasons why lumber is high and why it will remain high. The lumbermen haven't had their inning yet in the general prosperity and they have had twelve pretty lean years."

Under "The High Cost of Wastage," the last bulletin issued by the Atlantic Coast Shipbuilders' Association quotes an article in the Bethlehem Ship News as saying "We can't loaf and waste and build ships that will sell." In a group picture of a plant which was snapped without warning and is stated to be typical not a single man in the group is producing. The average rate in the yard is 65 cents an hour. By actual count 245 rivets were thrown around and three pounds of coal wasted. The entire cost of the wastage for a year (this representing a typical day) is estimated to be more than $200,000. The article concludes "And this is just one angle of the wastage problem. There are many others, and they all shove up the cost of ships."

Lumbermen all over the country have been commenting for months past on the decreased efficiency of their men. In one of the northern lumber states where the standard of efficiency is believed to be higher than in the southern sections, only one mill out of 12, in a recent detailed report, stated that the amount of work accomplished per hour was about the same as before the war. One said that what was done in 30 hours in 1914 now took 35 hours. One plant estimated that labor was 13 per cent less efficient than before the war, another noted a 27.4 per cent decrease in efficiency, another 20 per cent, another 27 per cent and another stated that their efficiency had decreased 30 per cent.

A PROBLEM IN GARAGE HEATING.

(Continued from Page 153.)

a second floor radiator connected to the top of the riser as illustrated by Fig. 3. If this radiator is not located exactly as desired, the circulating loop may be installed as illustrated and the drop pipe, having reached the ceiling of the basement, can be taken across the basement ceiling to the point where it drops to cross the garage to house space.

The plan of covering or insulation suggested is good and should prove satisfactory. If 80 sq. ft. of radiation is to be placed in the garage, the flow and return had better be 1½-inch in size. The drop below door sill in the basement near the boiler will not seriously interfere with the circulation.

Installations of this character have frequently been illustrated and discussed in these columns, and we have advised against them as being expensive and unsatisfactory. A small garage heating apparatus can be purchased at a reasonable price, is easily installed, and will prove far more economical in operation than the plan suggested. These heaters are manufactured for water circulation or may be had to heat the air with gas.

In order to keep the temperature of the water in the apparatus at a degree high enough to insure a good circulation to the garage there is a possibility of overheating the residence, should it be attached to the house heating system.

HEATING AND VENTILATING A COMBINED CHURCH, PARISH HOUSE AND RECTORY.

(Continued from Page 147.)

feet in round numbers. As the sections used, contain 10 square feet per section, the larger heaters have been made up of 8 sections each and the smaller ones of 4 sections each, making a total of 880 square feet, which is on the side of safety. In addition to these there are two vestibule heaters of 40 square feet each.

The main heater at the fan must have sufficient capacity to raise the temperature of 430,000 cubic feet of air from zero to 90 degrees, requiring 430,000×90÷55=700,000 B. t. u. per hour. A cast-iron heater operating under these conditions will have an efficiency of about 1,600 B. t. u. per square foot of surface per hour, calling for 700,000÷1,600=438 square feet in the present case. Using 11.5-foot sections of the "Vento" heater calls for 438÷11.5=38 sections. As we wish the heater to contain 3 rows, in order to get the necessary depth, we will use 3 rows of 13 sections each, making a total of 39 sections.

A heater of this dimension has a free area for the passage of air of 8 square feet. The volume of air passing through the heater per minute is 430,000÷60=7,166 cubic feet, giving a velocity through the heater of 7,166÷8=896 feet per minute, which is well within maximum limits.

A single inlet "Sirocco" fan is employed, having a fan wheel 30 inches in diameter, and running at a speed of 230 revolutions per minute.

Boilers.

The boilers, when working under maximum load, carry the following heating surface:

	Sq. Ft.
Direct, increased 15 per cent for piping	2,690
Indirect reheaters, increased for piping	1,104
Sunday school room fan heater	230
Main heater	460

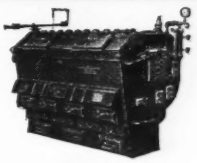
The thermal units required per hour to supply this surface will be as follows:

2,690× 250=672,500
1,104× 280=309,120
240× 800=192,000
460×1,600=736,000

Total.....1,909,620

Assuming 1 pound of coal to contain 13,000 B. t. u., and a boiler efficiency of 60 per cent, will give 13,000×0.6=7,800 B. t. u. per pound of coal burned. With a combustion of 7 pounds of coal per square foot of grate per hour, which is fair for the type of boiler used, we have 7,800×7=54,600 B. t. u. available per square foot of grate, and therefore requiring 1,909,620÷54,600=35 square feet. Using two boilers will call for $\frac{35}{2}$=17.5 square feet each. The boilers used have grates 48 inches wide by 54 inches in length, which gives a good proportion for properly caring for the fire. Much of the time a single boiler will be sufficient for carrying the entire load, it only being necessary to use both units on Sunday, when the full capacity of the plant is required.

Ronald Taylor, President of the New York Building Trades Employers' Association, told the Congressional Immigration Committee opposing legislation to restrict immigration that there is a 40 per cent shortage of laborers in building trades in New York, despite the fact that the established wage scale for common laborers is $6 for an 8-hour day, as compared with $1.75 for 9-hour day before war.



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This is a
Pierce Down Draft, Magazine Feed, Smoke Consuming, Heating Boiler
Saves Fuel Labor

Manufactured only by
PIERCE, BUTLER & PIERCE MANUFACTURING CORP.
Brooklyn NEW YORK Philadelphia
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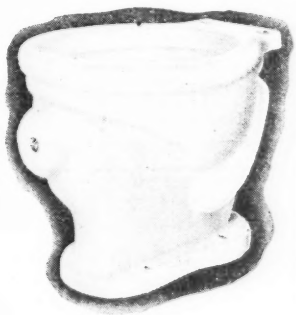
The Apex

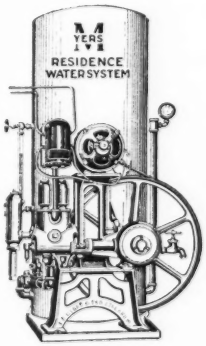
Equipped with a non-overflow that works 24 hours a day, besides a clean-out device through which obstructions are located and removed in 5 minutes.

Write

The Apex Supply Co.
Trenton, N. J.



The Apex



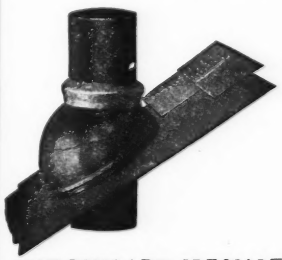
DEPENDABILITY

The dependability of the MYERS ELECTRIC HOUSE PUMP is well known in pump circles. Due to its superior construction, the result of fifty years of pump experience, this pump was successful from the very start, and because of its many improvements and special features, produces a standard of service that is uniform and dependable with a minimum of care and attention.

If you are not familiar with this part of the Myers line of "Honor-Bilt" Pumps for Every Purpose, write for catalog and copy of new folder "The Servant in the House."

F. E. MYERS & BRO.
ASHLAND, OHIO
Ashland Pump and Hay Tool Works

NO ROOF IS SUPERIOR TO ITS FLANGE



Therefore, some PLUMBER is the father of every leaky roof.

The Bullard Roof Flange

is acknowledged as the only PERFECT FLANGE by busy men who have made satisfying installations.

THE BULLARD SPECIALTY COMPANY, Tiffin, O.

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are high grade, insuring maximum service and minimum expense
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Floor and Ceiling Plates
Pipe Hangers, Clamps and Specialties
Write for New Catalog and Prices
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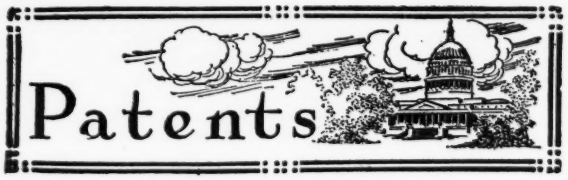
Fig. 100—Steel Floor or Ceiling Plate

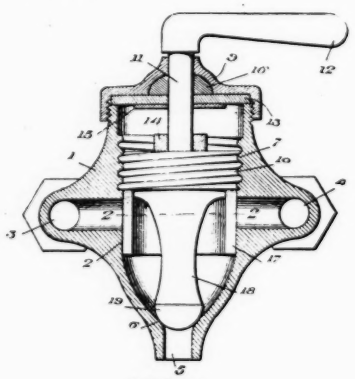
Brass and Copper Tubing
Seamless Drawn
Iron Pipe Sizes—Special Mixture if Desired
Crescent Brand Tubing is used exclusively in Wheeler Condensers. It is of special value to the plumbing trade. When QUALITY tubing is wanted always specify CRESCENT Brand.
Wheeler Condenser & Engineering Co., Carteret, N. J. 47

SHUR-TITE STOPS 'EM

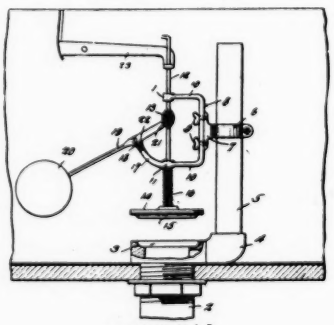


Plumbing Department.

1,336,236. Combination Faucet. Jacob T. Johnson, Atlanta, Ga. A valve comprising a casing having a chamber with a smooth cylindrical wall, a pair of inlet passages leading to said chamber, and a discharge outlet at one end of said chamber, said wall having screw threads at that side of said inlet passages opposite to the discharge outlet and spaced from said inlet passages, and a valve member screw threaded within said screw threaded portion of the wall, and having an arcuate portion extending therefrom and snugly fitting said smooth cylindrical wall and adapted to move across said passages, said valve member having a finger extending therefrom to seat over said outlet.


1,336,236.

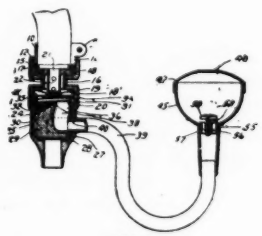
1,335,763. Closet Flush Valve. Edmund G. Stoltz, Granite City, Ill. In a device of the class described, a flush tank having an outlet, a lever, a bracket whereon the lever is fulcrumed intermediate its ends, a float on the outer end of the lever, the bracket including a part co-operating with the inner end of the lever to limit the downward movement thereof


1,335,763.

under the buoyant action of the float, a stem under the control of an operator and slidable in the bracket, a valve carried by the stem and controlling the outlet, a spring carried by the stem and exerting pressure on the valve, and an oval shaped abutment on the stem and engaging the inner end of the lever to hold the valve in open position where the inner end of the stem co-operates with said part of the bracket, the inner end of the lever being arcuate, whereby when the level of the liquid in the tank has fallen below the float, the abutment

will exert a positive lifting action on the inner end of the lever, independently of the weight of the float, thereby releasing the valve for downward movement.

1,336,401. Drinking Fountain. William Doucette, Revere, Mass. In a device of the character described, a casing adapted to be attached to an ordinary water faucet, said casing being provided with coupling means therefor and having an inlet therethrough and an outlet in alignment with said inlet and a bearing seat adjacent to the latter, an independent valve seat movable in axial alignment with said inlet and said outlet and having a passage therethrough between the axis thereof and its periphery, a rotatable valve bearing wholly on the bearing wholly on the bearing seat on said casing and on the said independent valve seat and wholly supported and rotatable thereon, said valve having one passage adapted at times to align with the passage in said valve seat and with said outlet and having another passage adapted at other times to align with said passage through said independent valve seat and adapted to direct water transversely thereto, a pipe provided with a drinking head and connected with said valve to communicate with its transverse passage and extending transversely to the valve to rotate the same.



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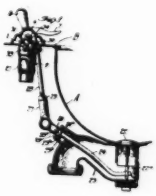
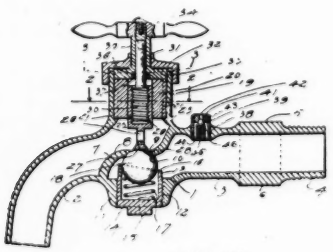


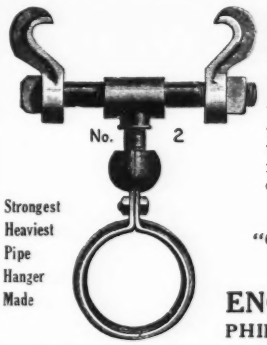
1,335,946.

1,335,946. Lavatory. Earl G. Watrous, Chicago, Ill. In a lavatory having a bowl and a plurality of independently operable mechanisms for controlling water flow with respect to the bowl, a part having upstanding ends and an intermediate opening, a series of handled members having their handles projecting within convenient single-hand-grasp, said members arranged in axial alignment, extending through and substantially filling said opening, and mounted for individual oscillation, and operating connections between said members and said water flow controlling mechanisms.



1,336,026.

1,336,026. Faucet. Edward M. Dempsey, Sidney, Ohio. A faucet or valve comprising a body provided with a partition having an opening, a valve seat formed on the under side of the partition about the opening therein, a valve co-operating with the seat, a spring yieldingly retaining the valve in engagement with the seat, a hollow extension formed on the upper side of the body and having a shoulder and grooves located above said shoulder, a bushing removably mounted in the extension upon the shoulder and provided with ribs fitting in the grooves, a rod slidably mounted in the bushing and having its upper end provided with a screw threaded socket and having its lower end engaging said valve, means



HANNA
BALL JOINT
PIPE HANGER

"Ball Joint" permits it to swing in any direction. Not necessary to remove hanger to raise or lower pipe.

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The Fuller Ball You Can Depend Upon First, Last and Every Time

Made of best quality material. Famous for its lasting service.

Look for the trade-mark stamped on all our Fuller Balls. It assures you of getting the right article at the right price.

We Make a Complete Line of

Hot Water Specialties

The Celebrated Bell Washers, Fuller Balls, Steam Valve Discs, and all kinds of small molded rubber goods.

Samples by parcel post.

ESTATE of ANDREW BELL, 2-4-6 Commercial St., Newark, N. J.

Chas. F. Hause Mfg. Co., Inc.
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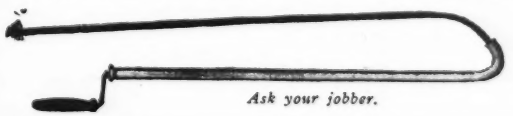
Makers of the famous

"HAUSE" PIPE JOINT CEMENT

In liquid and powder form. Sets like gum. Allows no leaks. And the

"HAUSE" CLOSET AUGER

Made of seamless brass tubes. Indispensable to plumbers.



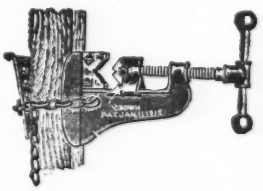
Ask your jobber.

"CROWN" Post Pipe Vise
Holds Tight and Firm Anywhere

Can be attached to any wood or iron, round or square post, pole or tree.

Jaws of best tool steel, hardened and drawn. Will not crush or allow pipe to slip. Made in two sizes.

Write for particulars and catalog.

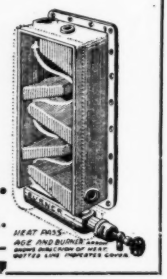


Ask your jobber for "Crown" Post Vises, Pipe Dies, Pipe Cutters, Etc.

CROWN DIE & TOOL CO., 555 W. Monroe St., Chicago

Sharp's Cleanout Water Heater Has No Coils

That's why it is superior to the coil type heater for use in hard water districts. While the lime deposits will clog it in time, a cleaning makes the heater as good as new again. And the small amount of gas consumed makes the cost of upkeep remarkably low. Such a heater should be in every home. We'll be glad to give you detailed information. Write.



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Heater Dept. Wheeling, W. Va.

Gerstein
Cistern and Riveted Pressure Boilers
can be described in one word—
Everlasting

They not only *last* but give continuous satisfactory service.

Made in any size, pressure or capacity desired.

Write for details.

Gerstein Bros. & Cooper
Coppersmiths
1-3 W. Third Street So. Boston, Mass.

HARTMAN INGOT METAL

H·I·M CO.

SHIP US YOUR SCRAP METALS
2511-2525 West 21st Street
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INBRACO

BALL COCKS
FLUSH VALVES
TANK TRIMMINGS

THE INDIANA BRASS CO.
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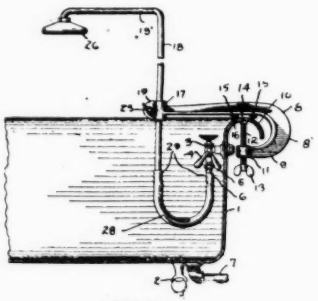
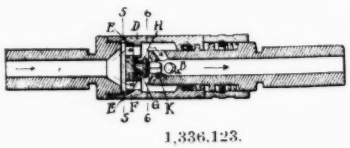
closing the upper end of the extension and engaging the upper end of the bushing, a stem rotatably mounted in the means and having its lower end threaded and engaging in the socket, said means having a bearing in its under side about the stem, and a shoulder on the stem engaging in the bearing.

1,336,034. Portable Bath Shower. Karl K. Jensen, Berkeley, Cal. In a device of the character described a bracket adapted to be supported on the edge of a tub; spaced gaskets on the under side of the bracket, contacting with the tub edge; an extension elbow on said bracket extending under the tub edge; a threaded clamp adjustably mounted in said elbow and



1,336,034.

adapted to be moved into frictional contact with the tub edge; a clamp formed in the opposite end of said bracket; a shower tube adapted to be secured therein; a shower head on one end of said shower tube; means for regulating the vertical and lateral position of said shower head by adjustment of the shower tube and a flexible tube connecting the shower tube to the source of water supply.

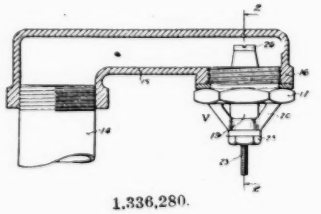


1,336,123.

1,336,123. Hose and Pipe Coupling. Charles W. Barnes, Puyallup, Wash., assignor of one-fourth to B. W. Coiner, Tacoma, Wash. A pipe coupling of the class described embodying a coupling section, a transverse partition therein provided with apertures, a disk valve having openings therein rotatably mounted upon said partition, a stem carried by the valve extending through an opening in said partition and having flattened sides at its projecting end and a pipe adapted to extend into said section with the end thereof formed to engage the end of said stem to rotate the valve during coupling and uncoupling movement of the pipe to the section.

Heating Department.

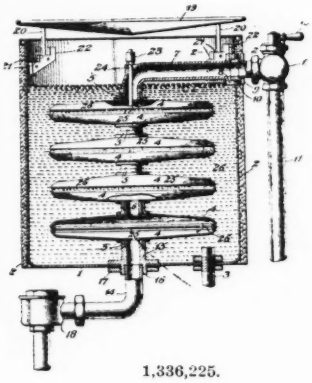
1,336,280. Automatic Air Vent. Patrick Carroll, New York, N. Y. The herein described automatic air vent comprising a casing having an open bottom, a valve seat screwed upward



1,336,280.

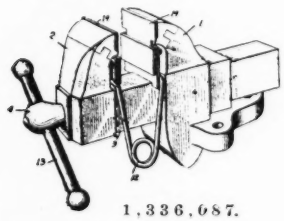
into the casing through said open bottom, said valve seat having a hollow center and including a rigid bracket as a part thereof, a vertically arranged tubular guide supported

centrally of the valve seat and upon said bracket, said guide having a threaded lower end, a valve seated upon said valve seat and adapted to open upward within the casing, said valve including a downwardly projecting hollow shank slidable in the guide and having an inturned lower end, a threaded pin having a head within the valve structure and extending thence downward through the center of the inturned end and adjusted in and through the threaded end of the guide, and a coil spring surrounding the pin and located between the inturned end of the shank and the head of the pin and serving to resiliently hold the valve seated.

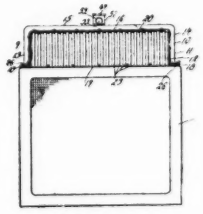


1,336,225.

1,336,225. Method of Humidifying Air. Robert W. Hardie, White Plains, N. Y., assignor to R. W. Hardie Co., Inc., a corporation of New York. The method of humidifying air, consisting in exposing a body of water to the atmosphere, converting the water into vapor by the application of a heating medium thereto, and in controlling the extent of area within the water to which the heating medium is applied, independently of any variation of the water level, substantially as described and illustrated.



1,336,087.



1,335,812.

1,336,087. Vise Attachment. Patrick F. O'Shaughnessy, Brooklyn, N. Y. A vise attachment embodying a vertically movable member adapted to be positioned between the jaws of a vise to underlie and support work clamped between the vise jaws, a spring associated with the member for holding it in co-operative relation relative to the vise, and means for locking the vertically movable member in a predetermined position beneath the work which it supports.

1,335,812. Condensing Radiator. Dowling Benjamin, Camden, N. J. A device of the character described including a receptacle for containing a cooling fluid, a vapor condensing head mounted above the normal level of the water in the receptacle, said head including a hollow jacket providing a chamber, a base plate located between the packet and the receptacle and hollow plates connecting the jacket and the base plate, said hollow plates having their passages communicating respectively with said chamber and the interior of the receptacle whereby the splash of the fluid within the receptacle will enter the passages of said plates and agitate the vapor therein and thereby accelerate its condensation, substantially as described.

When You Get the New Model Closet Bowls

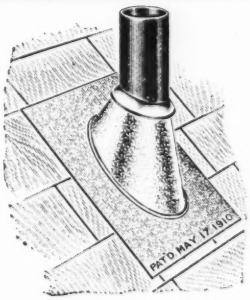
Are you going to set them the old, obsolete way and trust to luck in passing the tests? Or are you prepared to set these bowls so they will pass the tests every time?

There is no guesswork about water closet joints that are made with Snow Flexible Flange Gaskets. They will stick where you place them, they cannot rot, and no sewer gas or water can get through them.

Ask your jobber about them or if he cannot supply you write us.

Snow Flexible Gasket Company

J. W. Gannon, 30 Church St., New York City. | 1033-35 N. Clark St. Chicago, Illinois | Chas. W. Badger, 122 S. Michigan Ave., Chicago, Ill.



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Specify and Use the Reliable

"SIMPLEX"

Made in

All Lead—Copper—Galvanized Iron

Every Flashing Adjustable

Every Flashing Perfect

Manufactured only by

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Water Heaters and Tanks are built of steel; capacity from 150 to 875 gallons of hot (not warm) water per hour.

There is profit for you in installing them. Ask us how we will help you sell them.

KEWANEE BOILER COMPANY
Kewanee, Ill.

When you order Bibbs, Cocks, Stops and Valves, be sure that you specify

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Manufactured Only By

THE HAYDENVILLE COMPANY
HAYDENVILLE, MASS.
Since 1845

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The charge for advertisements under this heading is 6 cents a word, including heading and address; $1.00 minimum. To insure insertion, copy and remittance should reach us by Wednesday morning.

Situations Open

WANTED—SALESMAN EXPERIENCED in selling boilers, radiation and general heating line. Territory Southern Illinois. Address 122, "Domestic Engineering," Chicago. 4-17/24

WANTED—FIRST CLASS PLUMBERS. $44.00 for 44 hour week. Saturday half holiday. Double pay for over time. Open shop conditions. Andrew J. Leyerer, 210 W. Witherbee St., Flint, Mich. 4-17/5-8

SALESMAN—WHO CAN DEVELOP A growing business among architects and plumbers in Boston and vicinity with ability to handle growth. Haines, Jones & Cadbury Co., 1136 Ridge Ave., Philadelphia, Pa. 4-24

WANTED—SEVERAL GOOD NON-union plumbers. Ideal city to live in. The very best of wages. Plenty of work. Living reasonable. Married men preferred. A. E. Olson, Colorado Springs, Colo. 4-24/5-8

PLUMBERS AND STEAM FITTERS wanted for the Sunny South. Open shop conditions in an open shop town. Wages $1.00 per hour, eight hour day. Must be first class mechanics. Pettit-Galloway Co., 114 E. Seventh St., Little Rock, Ark. tf

AGENTS WANTED—TERRITORY OPEN for high class representatives to sell and install our equipment for burning barley, screenings and bituminous slack. Can be installed in majority of boilers. Culm-Burn Grate Co., 36 S. 7th St., Philadelphia, Pa. 4-17/5-8

SALESMEN WANTED—HIGHEST grade brass goods for plumbing trade, to be carried as side line. Require men who know brass goods. Liberal commission. Territories open are Kansas, Iowa, Illinois, Wisconsin and Minnesota. Advise references and territory. Applications confidential. Address 126, "Domestic Engineering," Chicago. 4-24

For Sale

WILL SACRIFICE FOR QUICK SALE $1200.00 plumbing stock and tools. Samuel Buchanan & Co., 2217 Broadway, Ft. Wayne, Ind. 4-24

FOR SALE—AN OLD ESTABLISHED plumbing and heating business in Oklahoma. A city of 90,000. Building permits for 1919 were $9,473,000. Stock will invoice for $6000. Address 127, "Domestic Engineering," Chicago. 4-24/5-15

FOR SALE—GOOD PLUMBING AND heating business. Up-to-date equipment and about $10,000 stock. Will sell cheap for cash. Owner in bad health and wants to leave country. Address T. B. Gary, Altus, Okla. 4-3-24

FOR SALE—PLUMBING AND HEATing business. Established 1883. Retiring from business. Stock will invoice about $3,500. Situated in the most prosperous farming community in northern Indiana. Population 11,000. Address 123, "Domestic Engineering," Chicago. 4-17/24

FOR SALE—1 HILL COMPANY ELECtric direct connected vacuum pump, 4x6, with automatic control; 1 Paul belted vacuum air line pump with single phase motor; used and new plumbing and heating material of all description. D. B. Plumbing & Heating Sales Co., Ft. Wayne, Ind. 4-17/5-8

FOR SALE—WHY HESITATE TO ANswer this ad, if you are looking for a profitable Plumbing, Heating and Sheet Metal Business? Have five men working at present, spring work just starting. Not a booming town, but a steady business the year around. Did over $27,000 last year. Outlook better this year. Lot of country work as well as in town. Several oil companies coming here this spring. An oil refinery four miles from town. Good place for business and fine place to live, close to mountains, fine water, scenery, all kinds of fishing and hunting. Would not think of selling but must give my time to other business here. Well established business, well stocked and equipped, competition light. Exceptional opportunity for someone. Will lease or sell building. $4,000 cash required. For particulars, Chas. Geiser, Lander, Wyo. 4-17 tf

Miscellaneous

Have You Engineering Ability?

There is unlimited demand for scientifically trained men in the Heating and Ventilating field today, and a distinct shortage of qualified engineers.

You can now secure complete scientific training in modern engineering practice through the new home study course of **HEATING AND VENTILATING ENGINEERING** available at

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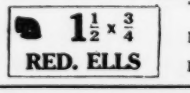
Write us for further information.

WANTED TO BUY—PIPE MACHINE, 2½" to 6". W. A. Bowers Heating Co., Milwaukee, Wis. 4-24

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf

A-1 PLUMBER AND FITTER WILL INvest $2,000 with services. What have you? Address 124, "Domestic Engineering," Chicago. 4-17/5-15

TIME SHEETS, JOB TICKETS, ESTImating blanks, illustrated stationery, blotters, etc. For plumbers. Reasonable. Send for catalog and price list. Prompt service. P. Fink & Sons, 56 N. 7th St., Philadelphia, Pa. 11-22 tf



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Haddon Bin Label Co.
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Government Proposals

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., April 8, 1920.—Sealed proposals will be opened in this office at 3 p. m., May 6, 1920, for the installation of a new heating boiler, etc., at the United States Post Office at Freeport, Ill., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Custodian at Freeport, Ill., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., April 8, 1920.—Sealed proposals will be opened in this office at 3 p. m., May 6, 1920, for a firebox heating boiler in the United States Post Office, Versailles, Ky., in accordance with specification and drawings, copies of which may be had at this office or at the office of the Custodian, Versailles, Ky., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., April 8, 1920.—Sealed proposals will be opened in this office at 3 p. m., May 6, 1920, for installation of new heating boiler, in the United States Post Office, at Chillicothe, Ohio. Drawings and specifications may be obtained from the Custodian at Chillicothe, Ohio, or at this office, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., April 15, 1920.—Sealed proposals will be opened in this office at 3 p. m., May 13, 1920, for the installation of a new heating boiler, etc., at the United States Post Office at Granite City, Illinois, in accordance with the drawings and specifications, copies of which may be had at this office or at the office of the Custodian at Granite City, Illinois, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

PROPOSALS FOR INDIAN SUPPLIES: Department of the Interior, Office of Indian Affairs, Washington, D. C., April 10, 1920. Sealed proposals, plainly marked on the outside of the sealed envelope: "Proposal for Hardware" (or other class of supplies as the case may be) and addressed to the "Commissioner of Indian Affairs, 310 Elm Street, St. Louis, Mo.," will be received until 10 o'clock a. m., on each of the following dates and on the class of supplies specified, and then opened: Hardware, June 3, 1920. Furniture, May 26, 1920. Harness, Leather, etc., May 28, 1920. Tinware, Stoves, etc., May 31, 1920. Shoes, Overshoes, etc., May 28, 1920. Paints, Oils, etc., June 1, 1920. Medical Supplies, June 3, 1920. Carbide, etc., May 26, 1920. Schedules covering all necessary information for bidders will be furnished upon application to the Indian Office, Washington, D. C., and to the U. S. Indian Warehouses at Chicago, St. Louis, and San Francisco. The Department reserves the right to reject any or all bids or any part of any bid, and to post tentative awards promptly, subject to correction. CATO SELLS, Commissioner.

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AUTOMATIC GAS WATER HEATERS
PITTSBURG WATER HEATER COMPANY - - - PITTSBURGH, PA.